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1914/15

# The University of Minnesota

## THE COLLEGE OF DENTISTRY

1914-1915



BULLETIN OF THE UNIVERSITY OF MINNESOTA  
VOL. XVII, NO. 9. JUNE 1914

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Minneapolis, Minn.

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1914							1915													
JULY							JANUARY							JULY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
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5	6	7	8	9	10	11	3	4	5	6	7	8	9	4	5	6	7	8	9	10
12	13	14	15	16	17	18	10	11	12	13	14	15	16	11	12	13	14	15	16	17
19	20	21	22	23	24	25	17	18	19	20	21	22	23	18	19	20	21	22	23	24
26	27	28	29	30	31	..	24	25	26	27	28	29	30	25	26	27	28	29	30	31
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AUGUST							FEBRUARY							AUGUST						
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2	3	4	5	6	7	8	7	8	9	10	11	12	13	8	9	10	11	12	13	14
9	10	11	12	13	14	15	14	15	16	17	18	19	20	15	16	17	18	19	20	21
16	17	18	19	20	21	22	21	22	23	24	25	26	27	22	23	24	25	26	27	28
23	24	25	26	27	28	29	28	..	..	..	..	..	..	29	30	31	..	..	..	..
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
SEPTEMBER							MARCH							SEPTEMBER						
..	..	1	2	3	4	5	..	1	2	3	4	5	6	..	..	1	2	3	4	..
6	7	8	9	10	11	12	7	8	9	10	11	12	13	5	6	7	8	9	10	11
13	14	15	16	17	18	19	14	15	16	17	18	19	20	12	13	14	15	16	17	18
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11	12	13	14	15	16	17	11	12	13	14	15	16	17	10	11	12	13	14	15	16
18	19	20	21	22	23	24	18	19	20	21	22	23	24	17	18	19	20	21	22	23
25	26	27	28	29	30	31	25	26	27	28	29	30	..	24	25	26	27	28	29	30
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NOVEMBER							MAY							NOVEMBER						
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8	9	10	11	12	13	14	2	3	4	5	6	7	8	7	8	9	10	11	12	13
15	16	17	18	19	20	21	9	10	11	12	13	14	15	14	15	16	17	18	19	20
22	23	24	25	26	27	28	16	17	18	19	20	21	22	21	22	23	24	25	26	27
29	30	..	..	..	..	..	23	24	25	26	27	28	29	28	29	30	..	..	..	..
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DECEMBER							JUNE							DECEMBER						
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13	14	15	16	17	18	19	13	14	15	16	17	18	19	12	13	14	15	16	17	18
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27	28	29	30	31	..	..	27	28	29	30	..	..	..	26	27	28	29	30	31	..

# UNIVERSITY CALENDAR

1914-1915

The University year covers a period of thirty-eight weeks, beginning on the second Tuesday in September. Commencement Day is always the second Thursday in June.

1914

September	1	Tuesday	Registration closes except for new students
September	1-8	Week	Fees payable except for new students
September	8-15	Week	Examinations for the removal of conditions, entrance examinations, registration of new students, and payment of fees
September	9-15	Week	Military encampment of cadets
September	16	Wednesday	First semester begins
November	25	Wednesday	Thanksgiving recess begins 9:00 p.m.
November	30	Monday	Thanksgiving recess ends 8:00 a.m.
December	18	Friday	Christmas vacation begins 9:00 p.m.

1915

January	5	Tuesday	Christmas vacation ends 8:00 a.m.
January	19	Tuesday	Registration for second semester closes
January	25	Monday	Final examinations begin
January	26	Tuesday	Payment of fees for second semester closes
February	3	Wednesday	Second semester begins
February	11	Thursday	First semester class reports due
February	12	Friday	Lincoln's Birthday: a holiday
February	22	Monday	Washington's Birthday: a holiday
March	31	Wednesday	Easter recess begins 9:00 p.m.
April	8	Thursday	Easter recess ends 8:00 a.m.
May	29	Saturday	Final examinations begin
June	5	Saturday	Second semester closes
June	6	Sunday	Baccalaureate service
June	7	Monday	Senior class day exercises
June	9	Wednesday	Alumni Day
June	10	Thursday	Forty-third Annual Commencement
June	11	Friday	Summer vacation begins
June	14	Monday	Summer session begins

The University year for 1915-16 will begin Tuesday, September 7.

NOTE.—During the year 1913-14 there were 101 recitation days the first semester, and 98 the second, inclusive of the final examination periods. In 1914-15 the number of recitation days will be exactly the same.



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# COLLEGE OF DENTISTRY

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\*On leave of absence 1914-15.

†On leave of absence first semester 1914-15.



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1224 Mary Place
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1931 4th Ave. S.
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802 E. Lake St.
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1516 7th St. S. E.
- ANDREW J. WEISS, Instructor in Technics 3708 Stevens Ave.

ARTHUR A. ZIEROLD, D.D.S., Instructor in Oral Surgery

902 Donaldson Bldg.

WALTER E. CAMP, B.A., Assistant in Anatomy

RAYMOND R. HENRY, Student Assistant in Dental Anatomy

ELMER R. HOSKINS, M.A., Assistant in Histology and Embryology.

LEE R. SWEITZER, B.A., Student Assistant in Crown and Bridge Work.

## GENERAL INFORMATION

### CURRICULUM

The course in the College of Dentistry leads to the degree of Doctor of Dental Surgery. It covers a period of three years of collegiate study, each year representing nine months in actual residence.

The studies are graded, so far as practicable, throughout the three years, and this grading is arranged with careful reference to the relation which the subjects naturally bear to each other.

The work of the first year deals with the scientific and laboratory branches; while that of the last two years includes the principles and practice of dentistry, its associated specialties, and the application of scientific and laboratory methods to clinical experience.

For statements of entrance requirements, registration and fees, see Bulletin of General Information.

For schedule of lectures, announcements, changes in college rules, etc., see bulletin board. The Rules for the Guidance of Students are printed in a separate booklet; in this will also be found a list of the required instruments.

### VOLUNTARY ACADEMIC REQUIREMENT

Students are advised to take at least one year of academic work for the following reasons: The student will thereby become more certain of himself and what his future vocation ought to be. He will be better prepared for professional study. He will have more time to devote to dentistry proper if his academic work included general chemistry. The student who has had some academic work is also better equipped for the practice of dentistry in the larger sense.

### ONE-YEAR ELECTIVE COURSE

The Dental Faculties Association of American Universities recommends that after the completion of the prescribed course all students devote one year of study to advanced technical subjects in dentistry, medicine, other sciences, or art.

### JOINT ACADEMIC-DENTISTRY COURSE

The first three years of the Arts and Dentistry course are given in the College of Science, Literature, and the Arts and the last three years in the College of Dentistry. It leads to the degree of Bachelor of Arts in four years and the degree of Doctor of Dental Surgery in six years.

Students registering in this course must, before completing their registration, choose a major line of work and secure the signature of an adviser in that department. In order to complete the academic portion of

their work they must obtain ninety (90) credits, including a major and two minors, one in each of the groups A, B, C (see Bulletin of the College of Science, Literature, and the Arts); and they must have an average of *good* in at least one-half of their work. The third year of Dentistry counts as equivalent to thirty (30) credits toward the B.A. degree, provided the student receives an average of *good* in one-half of such year's work.

No student may be admitted to the College of Dentistry as a candidate for the degrees of Bachelor of Arts and Doctor of Dental Surgery until he has satisfied the foregoing requirements.

#### SUMMER SESSION

A Summer Course of two months is offered in the Departments of Anatomy, Chemistry, Crown and Bridge Work, Operative Dentistry, Orthodontia, Physiology, and Prosthetic Dentistry.

#### RULES AND REGULATIONS

##### *Examinations, Standings, and Conditions*

No student with an entrance condition will be allowed to register for any second-year subject, nor will any student with any first-year condition or failure be allowed to register for a third-year subject.

No student will be allowed to omit any freshman work in order to make up entrance conditions, except by special permission of the department affected.

Students will not be permitted to substitute private work in any branch for the regular college courses.

Final examination in every required subject is held at the close of the work at the end of the semester or quarter, according to the extent of the course given. Opportunity is offered to remove conditions at the opening of the school year in September. The examinations at the end of semester or quarter are only for those who are taking the courses, while the September examinations are only for those who are attempting to remove conditions or are applicants for advanced standing.

The final standing of any student in a given subject shall be determined as the result of (a) practical work (laboratory or clinical), (b) recitations, and (c) oral or (d) written examinations. All of these factors shall be taken into consideration in making up the final grading in any subject.

Students' standings shall be determined at the end of the year by a conference of the heads of the departments in which the work is pursued during that year.

All standings shall be reported officially to and from the Registrar's Office at the end of the year.

Students shall be reported as *excellent*, *good*, *passed*, *incomplete*, *conditioned*, or *failed*.

Conditions must be removed at the beginning of the school year in September. No student who has any conditions unremoved at the close

of this examination is allowed to continue with his class without the express permission of the Dean upon the recommendation of the department concerned.

A condition not removed at the first opportunity becomes a failure subject to the rules governing failures.

Failures necessitate the taking of the work again in class.

A student carrying less than the complete schedule of work may pay fees on a clock hour basis.

A student who is conditioned in the majority of the subjects given in any year will become a *failed* student and must repeat the entire work of that year.

Students who carry *failures* into a succeeding year may find a resultant conflict of study hours; in that event they will give preference to the unfinished studies of the lower conflicting course.

Any student reported below grade in sixty per cent of his work at the middle or close of the first semester or middle of the second semester shall be dropped from the rolls and shall not be allowed to re-enter until the opening of the following year.

*Probation.*—Such student shall then be allowed to enter on probation; and, if reported by the middle of the semester or after as delinquent in two or more subjects, he shall be dropped without further action for that year.

*Work limited.*—Students pursuing any continuous subject who have done such poor work in the first semester as to receive a condition or failure in such subject, shall not be allowed to elect another subject in place of that in which the condition or failure was received, but shall be required to devote their full time to the remaining subjects of the course.

Exception to this rule shall be made only by the Committee on Students' Work after full investigation.

*Electives.*—A student may elect a subject in another department as a substitute for the elective in the course of study on consent of the Committee on Students' Work.

#### *Attendance and Discipline*

All lectures, laboratory and infirmary courses and clinics must be taken in full and must invariably be entered upon during the week in which they begin.

All students are required to provide themselves with instruments, books, tools, and materials as prescribed by the college.

Tardiness and absences are controlled by the principle that each student must do the full work of the course.

No student whose absences in any semester exceed four weeks in the aggregate shall be admitted to final examination without special permission of the Students' Work Committee.

Any student's registration may be refused or cancelled by the Registrar at the request of the Students' Work Committee on account of absences, indifference to study, poor scholarship, disorderly or immoral conduct, and for dishonesty in classroom or laboratory work.



The practice of dentistry by students, except under the direct supervision of a preceptor, is prohibited by law in the State of Minnesota. Students violating this law will be suspended or expelled.

Students are not allowed to obligate themselves in the Military Department, band, or other college activities, without permission from the Faculty.

#### *Eligibility Regulations*

No student shall take part in any public performance of a dramatic or musical club, or be eligible to election or appointment to official positions upon the boards of student publications, or take part in intercollegiate debates or oratorical contests, unless he has a clear record at the time.

#### ADVANCED STANDING

Applicants for advanced standing must present satisfactory evidence of possessing the preliminary educational qualifications required of the class they desire to enter.

They must also satisfy the professors of the branches from which they wish to be exempt, that the work pursued by them in other institutions was equal in scope and amount to that passed by the class they propose to enter.

No credits are accepted unconditionally, the Faculty reserving the privilege of examining any applicant when deemed necessary.

All certificates pertaining to advanced standing must be presented to the Dean, who will send them to the respective professors for acceptance or report of further requirements for acceptance.

#### REQUIREMENTS FOR GRADUATION

A candidate for the degree of Doctor of Dental Surgery must be twenty-one years of age, of good moral character, and, after having satisfied all the requirements for admission to the college, must have complied with all the rules and regulations of the college and obtained regular credit for all subjects of the entire course.

# COURSE OF STUDY

## FRESHMAN YEAR

Title	No.	Hours	Credits
<i>First semester</i>			
Anatomy, Descriptive .....	1	8	5
Chemistry .....	31	9	6
Dental Anatomy Lectures.....	1	1	1
Dental Anatomy*Technique.....	1	3	1
Prosthetic Technique .....	1	6	2
<i>Second semester</i>			
Anatomy, Histology and Embryology.....	2	8	5
Anatomy, Dissections .....	4	12	7
Chemistry, Organic .....	32	8	5
Dental Anatomy Lectures.....	2	1	1
Dental Anatomy Technique.....	2	3	1
Physiology .....	2	5	3
Physiological Chemistry .....	4	4	2
Prosthetic Lectures .....	2	1	1
Prosthetic Technique .....	2	6	2

## JUNIOR YEAR

<i>First semester</i>			
Crown and Bridge Lectures.....	1	1	1
Crown and Bridge Technique.....	1	9	3
Dental Metallurgy .....	1	1	1
Operative Lectures .....	1	1	1
Operative Technique .....	1	9	3
Pathology and Bacteriology .....	1	8	6
Pathology and Therapeutics .....	1	1	1
Prosthetic Lectures .....	3	1	1
Prosthetic Technique .....	3	9	3
<i>Second semester</i>			
Crown and Bridge Lectures.....	2	1	1
Crown and Bridge Technique.....	2	9	3
Operative Lectures .....	2	1	1
Operative Practice .....	2	9	3
Orthodontia Technique .....	2	9	3
Pathology and Therapeutics.....	2	1	1
Pharmacology, General .....	2	2	2
Prosthetic Lectures .....	4	1	1
Prosthetic Practice .....	4	6	2

## SENIOR YEAR

*First semester*

Title	No.	Hours	Credits
Crown and Bridge Lectures.....	3	1	1
Crown and Bridge Practice.....	3	12	4
Operative Lectures .....	3	1	1
Operative Practice .....	3	12	4
Oral Surgery Lectures.....	1	2	2
Oral Surgery Practice.....	1	3	1
Orthodontia Lectures .....	3	2	2
Orthodontia Practice .....	3	4½	1½
Prosthetic Practice .....	5	4½	1½

*Second semester*

Conference Course in Theory and Practice..	2	2	2
Crown and Bridge Lectures.....	4	1	1
Crown and Bridge Practice.....	4	12	4
Operative Lectures .....	4	1	1
Operative Practice .....	4	12	4
Oral Surgery Lectures.....	2	1	1
Oral Surgery Practice.....	2	3	1
Orthodontia Lectures .....	4	1	1
Orthodontia Practice .....	4	4½	1½
Prosthetic Practice .....	6	4½	1½

## ELECTIVES

Advanced Bacteriology .....	3	3
Advanced Pathology .....	3	3
Comparative Dental Anatomy.....	1-2	3
Dental Electricity and Radiography.....	151-152	3
Economics, Elementary .....	1-2	3
Psychology .....	1-2	3
Special Materia Medica.....	3	3

NOTE.—One elective to be taken during either the junior or senior year.

## DEPARTMENTAL STATEMENTS

Odd numbers indicate first-semester courses; even numbers, second-semester courses. A combination of the two (e. g., 5-6) indicates courses continuing through the year. In the case of courses repeated the second semester, the suffix *a* indicates first semester; the suffix *b*, second semester.

### ANATOMY

Professors CLARENCE M. JACKSON, THOMAS G. LEE; Associate Professors CHARLES A. ERDMANN, RICHARD E. SCAMMON; Instructors WILLIAM F. ALLEN, EDWIN A. BAUMGARTNER; Assistants WALTER E. CAMP, ELMER R. HOSKINS.

COURSES				
No.	Title	Credits	Offered to	Prereq. courses
1.	Descriptive Anatomy.....	5	Fr.	None
2.	Histology and Embryology.....	5	Fr.	1
4.	Dissections.....	7	Fr.	1

1. **DESCRIPTIVE ANATOMY.** The course consists of lectures, recitations, laboratory work, demonstrations, and practical work in gross, human, and vertebrate anatomy. This course is only open to dental students and is especially arranged for their needs. BAUMGARTNER, HOSKINS.
2. **HISTOLOGY AND EMBRYOLOGY.** The course consists of lectures, recitations, laboratory work, and demonstrations. Special knowledge will be laid upon the knowledge of the development and structure of the head, mouth, jaw, teeth, and other portions of the digestive system. Each student will prepare a number of specimens illustrating the structure of the teeth and jaws. LEE, ALLEN, CAMP.
4. **DISSECTIONS.** Dissection of the upper half of the body with special attention to the head region. ERDMANN, BAUMGARTNER, HOSKINS.

### CHEMISTRY

Professor GEORGE B. FRANKFORTER; Assistant Professor IRA H. DERBY; Instructor E. K. STRACHAN.

COURSES				
No.	Title	Credits	Offered to	Prereq. courses
31.	General Chem. & Qual. Anal.....	6	Fr.	Gen. Chem.
32.	Organic Chemistry.....	5	Fr.	31

31. **GENERAL CHEMISTRY AND QUALITATIVE ANALYSIS.** This course consists of a review of the principles of inorganic chemistry and an introduction to physical chemistry, especially as applied to solutions, alloys, etc.; an introduction to qualitative analysis, including the common metals and acids. STRACHAN and Assistants.

32. **ORGANIC CHEMISTRY.** An outline of the chemistry of carbon, including the preparation of some of the more important organic compounds. Special emphasis is laid on those substances used in medicine. DERBY and Assistants.

### CROWN AND BRIDGE WORK

Professor FORREST H. ORTON; Associate Professor AMOS S. WELLS; Assistant Professors PETER J. BREKHUS, ALFRED A. PAGENKOPF, GEORGE W. REYNOLDS, CHARLES A. WIETHOFF; Instructors WILLIAM McDUGALL, WILLIAM A. ROLL, HERBERT C. NELSON; Assistant LEE R. SWEITZER.

No.	Title	COURSES			Prereq. courses
		Credits	Offered to		
1.	Crown & Bridge Technique.....	4	Jr.		Dent. Anat. 2
2.	Crown & Bridge Technique.....	4	Jr.		1
3.	Crown & Bridge Practice.....	5	Sr.		2
4.	Crown & Bridge Practice.....	5	Sr.		3

1. **CROWN AND BRIDGE TECHNIQUE.** A course of lectures, demonstrations, and laboratory work that includes all the more important forms of crowns and bridges. WELLS, REYNOLDS, NELSON.
2. **CROWN AND BRIDGE TECHNIQUE.** Continuation of Course 1 as outlined above. WELLS, REYNOLDS, NELSON.
3. **CROWN AND BRIDGE PRACTICE.** A course of lectures and clinical practice covering the entire field of crown and bridge work. ORTON, BREKHUS, PAGENKOPF, McDUGALL, ROLL.
4. **CROWN AND BRIDGE PRACTICE.** Continuation of Course 3 as outlined above. ORTON, BREKHUS, PAGENKOPF, McDUGALL, ROLL.

### DENTAL ANATOMY

Assistant Professor GEORGE M. DAMON; Instructors OSCAR COOPERMAN, CARL O. FLAGSTAD, CARL H. PETRI, CHARLES E. RUDOLPH; Assistant RAYMOND R. HENRY.

No.	Title	COURSES			Prereq. courses
		Credits	Offered to		
1.	Dental Anatomy.....	2	Fr.		None
2.	Dental Anatomy.....	2	Fr.		1

1. **DENTAL ANATOMY.** The course will consist of lectures, recitations, and such laboratory work as drawing, dissection, modeling, and carving of the teeth. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH.
2. **DENTAL ANATOMY.** Continuation of Course 1 as outlined above. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH.



## DENTAL METALLURGY

Professor ALFRED OWRE; Assistant Professor HARRY C. LAWTON.

No.	Title	COURSES			Prereq. courses
		Credits	Offered to		
1.	Dental Metallurgy.....	1	Jr.		Chem. §31, 32

- 1 DENTAL METALLURGY. Lectures, recitations, and demonstrations, taking up the most important metals with special reference to those used in dentistry. OWRE, LAWTON.

## OPERATIVE DENTISTRY

Professors JAMES M. WALLS, HENRY S. GODFREY; Associate Professors CHARLES A. GRIFFITH, HERMAN A. MAVES; Assistant Professors NORMAN J. COX, ROBERT O. GREEN; Instructors RALPH W. COUNTRYMAN, MAX E. ERNST, WILLIAM A. GREY, R. S. MAYBURY, MARK PATTRIDGE, HARVEY C. SAMUELS, JOSEPH F. SHELLMAN.

No.	Title	COURSES			Prereq. courses
		Credits	Offered to		
1.	Operative Dentistry Technique...	4	Jr.		Dent. Anat. 2
2.	Operative Dentistry Practice....	4	Jr.		1
3.	Operative Dentistry Practice....	5	Jr., sr.		2
4.	Operative Dentistry Practice....	5	Jr., sr.		3

1. OPERATIVE DENTISTRY TECHNIQUE. This course consists of lectures, recitations, demonstrations, and laboratory work of a technical nature. WALLS, GREEN, COUNTRYMAN, ERNST, MAYBURY, PATTRIDGE, SAMUELS, SHELLMAN.
2. OPERATIVE DENTISTRY PRACTICE. This course consists of lectures, recitations, and clinical practice. WALLS, GREEN, COUNTRYMAN, ERNST, MAYBURY, PATTRIDGE, SAMUELS, SHELLMAN.
3. OPERATIVE DENTISTRY PRACTICE. A course of lectures, recitations, conference work, demonstrations, and clinical practice covering the entire field of operative dentistry. WALLS, GODFREY, GRIFFITH, MAVES, COX, GREY.
4. OPERATIVE DENTISTRY PRACTICE. Continuation of Course 3 as outlined above. WALLS, GODFREY, GRIFFITH, MAVES, COX, GREY.

## ORAL SURGERY

Professor THOMAS B. HARTZELL; Assistant Professor RAY R. KNIGHT; Instructor ARTHUR A. ZIEROLD.

No.	Title	COURSES			Prereq. courses
		Credits	Offered to		
1.	Oral Surgery.....	3	Sr.		Path. & Ther. 2
2.	Oral Surgery.....	2	Sr.		1

1. ORAL SURGERY. This course is taught by lectures, recitations, and practical demonstrations covering the field of oral diseases. Such subjects as physical diagnosis, anesthesia, and urinalysis are taught in connection with this course. HARTZELL, KNIGHT, ZIEROLD.
2. ORAL SURGERY. Continuation of Course 1 as outlined above. HARTZELL, KNIGHT, ZIEROLD.

### ORTHODONTIA

Professor OSCAR A. WEISS; Associate Professor WILLIAM F. LASBY; Assistant Professor HARRY C. LAWTON; Instructors CARL O. FLAGSTAD, DANIEL O. OSTERGREN, ANDREW J. WEISS.

COURSES				
No.	Title	Credits	Offered to	Prereq. courses
2.	Orthodontia Technique.....	4	Jr.	Pros. Tech. 3
3.	Orthodontia Practice.....	3½	Sr.	1
4.	Orthodontia Practice.....	2½	Sr.	2

2. ORTHODONTIA TECHNIQUE. A course of lectures, recitations, and laboratory work in the technique of steel and the making of regulating appliances. WEISS, LAWTON, FLAGSTAD, WEISS.
3. ORTHODONTIA PRACTICE. A course of lectures, recitations, and clinical work on the theory and practice of orthodontia. Every student is required to treat at least one irregularity of the teeth. WEISS, LASBY, OSTERGREN.
4. ORTHODONTIA PRACTICE. A continuation of Course 2 as outlined above. WEISS, LASBY, OSTERGREN.

### PATHOLOGY AND BACTERIOLOGY

Associate Professor HAROLD E. ROBERTSON†; Assistant Professors E. T. BELL, WINFORD P. LARSON; Instructors ARTHUR T. HENRICI, MARGARET WARWICK.

COURSES				
No.	Title	Credits	Offered to	Prereq. courses
1.	Bacteriology & Pathology.....	6	Jr.	None

1. A course of lectures combined with laboratory exercises and demonstrations designed to illustrate the general principles and a few special applications of Pathology and Bacteriology. ROBERTSON, BELL, LARSON, HENRICI, WARWICK.

### PATHOLOGY AND THERAPEUTICS

Professor THOMAS B. HARTZELL.

COURSES				
No.	Title	Credits	Offered to	Prereq. courses
1.	Pathology & Therapeutics.....	1	Jr.	None
2.	Pathology & Therapeutics.....	1	Jr.	1

†On leave of absence 1914-15.

1. PATHOLOGY AND THERAPEUTICS. These subjects are taught by lectures and recitations involving general pathology as a foundation of the special pathology of the oral cavity; paying particular attention to the therapeutic requirements of the lesions of the mouth and teeth. The work in pathology is supplemented by laboratory work under the care of the chair of pathology, Department of Medicine. HARTZELL.
2. PATHOLOGY AND THERAPEUTICS. Continuation of Course 1 as outlined above. HARTZELL.

## PHARMACOLOGY

Professor ARTHUR D. HIRSCHFELDER; Associate Professor EDGAR D. BROWN; Assistant Professor ROBERT A. HALL.

No.	Title	COURSES		
		Credits	Offered to	Prereq. courses
2.	General Pharmacology.....	2	Jr.	None
2.	Experimental Pharmacology.....	..	Jr.	1

2. GENERAL PHARMACOLOGY as applied to dentistry comprises a study of the properties, action, and therapeutic application of the principal drugs used in dentistry with exercises in prescription writing. HIRSCHFELDER, BROWN, HALL.
2. Laboratory exercises in experimental pharmacology to afford the student the opportunity for observing the effects of the principal types of drugs upon the animal will be given to sections of the class in connection with Course 1. HIRSCHFELDER, BROWN, HALL.

## DEPARTMENT OF PHYSIOLOGY

Professor ELIAS POTTER LYON; Associate Professors RICHARD OLDING BEARD, FREDERICK H. SCOTT†; Assistant Professor M. RUSSELL WILCOX  
Instructors C. J. V. PETTIBONE, FRANCIS B. KINGSBURY.

No.	Title	COURSES		
		Credits	Offered to	Prereq. courses
2.	Physiology.....	3	Fr.	None
4.	Physiological Chemistry.....	2	Fr.	1

2. PHYSIOLOGY. A course of lectures and laboratory exercises covering the essentials of physiology. LYON, SCOTT, PETTIBONE.
4. PHYSIOLOGICAL CHEMISTRY. A course of lectures and laboratory exercises covering the essentials of physiological chemistry. LYON, SCOTT, PETTIBONE.

## PROSTHETIC DENTISTRY

Professor OSCAR A. WEISS; Associate Professor WILLIAM F. LASBY; Assistant Professors GEORGE M. DAMON, HARRY C. LAWTON; Instructors

†On leave of absence first semester 1914-15.

OSCAR COOPERMAN, CARL O. FLAGSTAD, DANIEL O. OSTERGREN, CARL H. PETRI, CHARLES E. RUDOLPH, ANDREW J. WEISS.

COURSES				
No.	Title	Credits	Offered to	Prereq. course
1.	Prosthetic Technique.....	2	Fr.	None
2.	Prosthetic Technique.....	3	Fr.	1
3.	Prosthetic Technique.....	3	Jr.	2
4.	Prosthetic Practice.....	3	Jr.	3
5.	Prosthetic Practice.....	1½	Sr.	4
6.	Prosthetic Practice.....	1½	Sr.	5

1. PROSTHETIC TECHNIQUE. This course consists of lectures and technic work in the laboratory, comprising impression materials and their uses and the simpler processes of plate work. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH.
2. PROSTHETIC TECHNIQUE. Continuation of Course 1 as outlined above. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH.
3. PROSTHETIC DENTISTRY TECHNIQUE. The course consists of lectures, recitations, and laboratory work covering the principles and practice of plate work. WEISS, LAWTON, FLAGSTAD, WEISS.
4. PROSTHETIC DENTISTRY PRACTICE. A course of lectures, recitations, and clinical work covering the simpler forms of prosthetic practice. WEISS, LASBY.
5. PROSTHETIC DENTISTRY PRACTICE. A course of lectures, recitations, and clinical work, covering cleft palate and other special cases in addition to the general prosthetic practice. WEISS, LASBY.
6. PROSTHETIC DENTISTRY PRACTICE. Continuation of Course 5 as outlined above. WEISS, LASBY.

### THEORY AND PRACTICE OF DENTISTRY

Professor ALFRED OWRE.

COURSES				
No.	Title	Credits	Offered to	Prereq. courses
2.	Theory & Practice of Dentistry...	2	Sr.	None

2. THEORY AND PRACTICE OF DENTISTRY. A lecture and conference course on subjects of a dental nature and other topics closely related to dentistry. OWRE and Assistants.

### ELECTIVES

NOTE.—One elective to be taken during either the junior or senior year.

### COMPARATIVE DENTAL ANATOMY

Instructor MARY V. HARTZELL.

No.	Title	COURSES		
		Credits	Offered to	Prereq. courses
1-2.	Comparative Dental Anatomy....	3	Jr., sr.	Anat. 1, 2, 3.

- 1-2. COMPARATIVE DENTAL ANATOMY. A course embracing the comparative study of animal life, giving special attention to the number, form, and arrangement of the teeth. HARTZELL.

## DENTAL ELECTRICITY AND RADIOGRAPHY

Professor FRANK W. SPRINGER; Assistant Professor RAY R. KNIGHT.

No.	Title	COURSES		
		Credits	Offered to	Prereq courses
151.	Dental Electricity.....	2	Jr., sr.	None
2.	Radiography.....	1	Jr., sr.	151

151. DENTAL ELECTRICITY. A course of lectures, recitations, and demonstrations on the elements of electricity and magnetism, the construction, use, care, and operation of batteries, motors, dynamos, switch boards, and other electrical appliances used in dental offices. SPRINGER.
2. RADIOGRAPHY. This course consists of the making, developing, and reading of dental radiographs, together with the essentials of general radiology. The students secure individual instruction and have the opportunity of doing the actual work. KNIGHT.

## ECONOMICS

Assistant Professors J. FRANKLIN EBERSOLE, THOMAS WARNER MITCHELL, L. D. H. WELD.

No.	Title	COURSES		
		Credits	Offered to	Prereq. courses
1a.	Elements of Economics.....	3	Jr., sr.	None
1b.	Elements of Economics.....	3	Jr., sr.	None

- 1a. ELEMENTS OF ECONOMICS. A course of economic theory with special reference to present-day economic and social problems. MITCHELL, EBERSOLE, WELD.
- 1b. ELEMENTS OF ECONOMICS. Same as Course 1a.

## PSYCHOLOGY

Associate Professor DAVID F. SWENSON; Instructor EDMUND T. DANA.

No.	Title	COURSES		
		Credits	Offered to	Prereq. courses
5a.	Elements of Psychology.....	3	Soph., jr., sr.	None
5b.	Elements of Psychology.....	3	Soph., jr., sr.	None

- 5a. ELEMENTS OF PSYCHOLOGY. This course is for those who do not expect to take further work in psychology, but wish a brief outline of the



subject, either as preparatory for work in philosophy or as part of their general education. The significance of mental facts for problems in philosophy. SWENSON, DANA.

5b. ELEMENTS OF PSYCHOLOGY. Same as Course 5a.

ADVANCED BACTERIOLOGY

ADVANCED PATHOLOGY

SPECIAL MATERIA MEDICA

NOTE.—Courses in the above subjects will be arranged along the lines in which students elect to specialize.











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1915-16.

# Bulletin of The University of Minnesota

## THE COLLEGE OF DENTISTRY

1915-1916



UNIVERSITY OF ILLINOIS

AUG 8 1915

PRESIDENT'S OFFICE  
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1915							1916													
JULY							JANUARY							JULY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
..	..	..	..	1	2	3	..	..	..	..	..	..	1	..	..	..	..	..	..	1
4	5	6	7	8	9	10	2	3	4	5	6	7	8	2	3	4	5	6	7	8
11	12	13	14	15	16	17	9	10	11	12	13	14	15	9	10	11	12	13	14	15
18	19	20	21	22	23	24	16	17	18	19	20	21	22	16	17	18	19	20	21	22
25	26	27	28	29	30	31	23	24	25	26	27	28	29	23	24	25	26	27	28	29
..	..	..	..	..	..	..	30	31	..	..	..	..	..	30	31	..	..	..	..	..
AUGUST							FEBRUARY							AUGUST						
1	2	3	4	5	6	7	..	..	1	2	3	4	5	..	..	1	2	3	4	5
8	9	10	11	12	13	14	6	7	8	9	10	11	12	6	7	8	9	10	11	12
15	16	17	18	19	20	21	13	14	15	16	17	18	19	13	14	15	16	17	18	19
22	23	24	25	26	27	28	20	21	22	23	24	25	26	20	21	22	23	24	25	26
29	30	31	..	..	..	..	27	28	29	..	..	..	..	27	28	29	30	31	..	..
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SEPTEMBER							MARCH							SEPTEMBER						
..	..	..	1	2	3	4	..	..	..	1	2	3	4	..	..	..	1	2	3	4
5	6	7	8	9	10	11	5	6	7	8	9	10	11	3	4	5	6	7	8	9
12	13	14	15	16	17	18	12	13	14	15	16	17	18	10	11	12	13	14	15	16
19	20	21	22	23	24	25	19	20	21	22	23	24	25	17	18	19	20	21	22	23
26	27	28	29	30	..	..	26	27	28	29	30	31	..	24	25	26	27	28	29	30
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OCTOBER							APRIL							OCTOBER						
..	..	..	..	..	1	2	..	..	..	..	..	..	1	1	2	3	4	5	6	7
3	4	5	6	7	8	9	2	3	4	5	6	7	8	8	9	10	11	12	13	14
10	11	12	13	14	15	16	9	10	11	12	13	14	15	15	16	17	18	19	20	21
17	18	19	20	21	22	23	16	17	18	19	20	21	22	22	23	24	25	26	27	28
24	25	26	27	28	29	30	23	24	25	26	27	28	29	29	30	31	..	..	..	..
31	..	..	..	..	..	..	30	..	..	..	..	..	..	..	..	..	..	..	..	..
NOVEMBER							MAY							NOVEMBER						
..	1	2	3	4	5	6	..	1	2	3	4	5	6	..	..	..	1	2	3	4
7	8	9	10	11	12	13	7	8	9	10	11	12	13	5	6	7	8	9	10	11
14	15	16	17	18	19	20	14	15	16	17	18	19	20	12	13	14	15	16	17	18
21	22	23	24	25	26	27	21	22	23	24	25	26	27	19	20	21	22	23	24	25
28	29	30	..	..	..	..	28	29	30	31	..	..	..	26	27	28	29	30	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
DECEMBER							JUNE							DECEMBER						
..	..	..	1	2	3	4	..	..	..	1	2	3	..	..	..	..	..	1	2	3
5	6	7	8	9	10	11	4	5	6	7	8	9	10	3	4	5	6	7	8	9
12	13	14	15	16	17	18	11	12	13	14	15	16	17	10	11	12	13	14	15	16
19	20	21	22	23	24	25	18	19	20	21	22	23	24	17	18	19	20	21	22	23
26	27	28	29	30	31	..	25	26	27	28	29	30	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..

# UNIVERSITY CALENDAR

1915-1916

The university year covers a period of thirty-eight weeks, beginning on the Tuesday before the second Thursday in September. Commencement Day is always the second Thursday in June.

1915

August	31	Tuesday	Registration closes except for new students
September	1-8	Week	Fees payable except for new students
September	7-14	Week	Examinations for the removal of conditions (except Colleges of Agriculture and Forestry), entrance examinations, registration of new students, and payment of fees
September	15	Wednesday	First semester begins
September	27	Monday	Agricultural College, farm experience examination
October	4	Monday	School of Agriculture, first term begins
October	7	Thursday	Senate meeting, 4:00 p.m.
November	8	Monday	Dairy School opens
November	24	Wednesday	Thanksgiving recess begins 9:00 p.m.
November	29	Monday	Thanksgiving recess ends 8:00 a.m.
Nov. 29 to Dec. 4	Week		Second semester condition examinations, Colleges of Agriculture and Forestry
December	2	Thursday	Senate meeting, 4:00 p.m.
December	6-11	Week	Short course for ice-cream makers
December	11	Saturday	Dairy School closes
December	17	Friday	Christmas vacation begins 9:00 p.m.
December	17	Friday	School of Agriculture, first term closes

1916

January	3-8	Week	Farmers' Short Course
January	4	Tuesday	Christmas vacation ends 8:00 a.m.
January	18	Tuesday	Registration for second semester closes
January	21	Tuesday	School of Agriculture, second term begins
January	24	Monday	Final examinations begin
January	25	Tuesday	Payment of fees for second semester closes
February	2	Wednesday	Second semester begins
February	3	Thursday	Senate meeting, 4:00 p.m.
February	12	Saturday	Lincoln's Birthday: a holiday
February	22	Tuesday	Washington's Birthday: a holiday
March	30	Wednesday	School of Agriculture closes.

April	3-8	Week	Junior Short Course
April	19	Wednesday	Easter recess begins 9:00 p.m.
April	27	Thursday	Easter recess ends 8:00 a.m.
May	1-6	Week	Condition examinations in certain colleges
May	2	Tuesday	Traction Engineering Course begins
May	4	Thursday	Senate meeting, 4:00 p.m.
May	26	Friday	Final examinations begin
May	30	Tuesday	Memorial Day: a holiday
June	1-8	Week	Military Encampment, Fort Snelling
June	3	Saturday	Second semester closes
June	4	Sunday	Baccalaureate service
June	5	Monday	Senior class day exercises
June	7	Wednesday	Alumni Day
June	8	Thursday	Forty-fourth Annual Commencement.
June	9	Friday	Summer vacation begins
June	12	Monday	Summer Session begins

The university year for 1916-17 will begin Tuesday, September 12.

#### *Program of Entrance Examinations 1915-1916*

Entrance examinations for admission to the various colleges of the University will be conducted according to the following schedule, in Room 112, Library Building, unless otherwise specified.

Any student finding a conflict in his program should report to the Registrar for adjustment.

Tuesday,	Sept. 7	9 a.m.	Business Subjects, Elementary Algebra, Plane Geometry
		2 p.m.	Manual Subjects, Domestic Art and Science, Agriculture, Higher Algebra, Solid Geometry
Wednesday,	Sept. 8	9 a.m.	Astronomy, Botany, Geology, Chemistry, Physiography, Zoology, Physics, Physiology
		2 p.m.	American Government, History, Economics, Commercial Geography, History of Commerce, Economic History of England, Economic History of the United States
Thursday	Sept. 9	9 a.m.	English
		2 p.m.	German, Greek, French, Latin, Scandinavian, Spanish

A representative of each department will be at the office of the head of the department each forenoon of entrance examination week from 9 to 12 to give information and advice.

# COLLEGE OF DENTISTRY

## FACULTY

- GEORGE EDGAR VINCENT, Ph.D., LL.D., President 1005 5th St. S. E.  
 CYRUS NORTHROP, LL.D., President, Emeritus 519 10th Ave. S. E.  
 ALFRED OWRE, B.A., C.M., M.D., D.M.D., Dean, Professor of Theory and  
 Practice of Dentistry and Dental Metallurgy 2109 Blaisdell Ave.  
 RICHARD OLDING BEARD, M.D., Associate Professor of Physiology  
 University of Minnesota  
 E. T. BELL, B.S., M.D., Assistant Professor of Pathology  
 215 Walnut St. S. E.  
 PETER J. BREKHUS, B.A., D.D.S., Associate Professor of Crown and  
 Bridge Work 3719 Pleasant Ave.  
 EDGAR D. BROWN, Ph.D., M.D., Associate Professor of Pharmacology  
 3525 3rd Ave. S.  
 OSCAR COOPERMAN, D.D.S., Assistant Professor in Prosthetic Dentistry  
 and Dental Anatomy 638 6th Ave. N.  
 RALPH W. COUNTRYMAN, D.D.S., Assistant Professor in Operative Den-  
 tistry 401 Reid Corner  
 NORMAN J. COX, B.S., D.M.D., Assistant Professor of Operative Dentistry  
 986 15th Ave. S. E.  
 GEORGE M. DAMON, D.D.S., Associate Professor of Prosthetic Dentistry  
 and Dental Anatomy 3340 Portland Ave.  
 IRA HARRIS DERBY, Ph.D., Assistant Professor of Chemistry  
 2157 Commonwealth Ave., St. Paul  
 J. FRANKLIN EBERSOLE, M.A., Assistant Professor of Economics  
 312 State St. S. E.  
 CHARLES A. ERDMANN, M.D., Associate Professor of Applied Anatomy  
 612 9th Ave. S. E.  
 CARL O. FLAGSTAD, D.D.S., Assistant Professor in Prosthetic Dentistry,  
 Orthodontia and Dental Anatomy 229 Cedar Ave.  
 GEORGE B. FRANKFORTER, Ph.D., Professor of Chemistry and Dean of  
 the School of Chemistry 525 E. River Road  
 HENRY S. GODFREY, D.M.D., Professor of Operative Dentistry  
 1766 Girard Ave. S.  
 ROBERT O. GREEN, D.D.S., Associate Professor of Operative Dentistry  
 828 Lowry Bldg., St. Paul  
 CHARLES A. GRIFFITH, D.D.S., Associate Professor of Oral Surgery  
 1090 15th Ave. S. E.  
 ROBERT A. HALL, Ph.D., Assistant Professor of Pharmacology  
 323 6th Ave. S. E.  
 THOMAS B. HARTZELL, D.M.D., M.D., Professor of Oral Surgery, Thera-  
 peutics, and Clinical Pathology 716 Donaldson Bldg.



- ARTHUR D. HIRSCHFELDER, B.S., M.D., Professor of Pharmacology and  
Director of the Department 906 5th St. S. E.  
S. L. HOYT, E.M., Ph.D., Assistant Professor of Metallurgy.  
715 University Ave.
- CLARENCE M. JACKSON, M.S., M.D., Professor of Anatomy and Director  
of the Department 428 Walnut St. S. E.
- RAY R. KNIGHT, B.A., M.D., Assistant Professor of Oral Surgery, Thera-  
peutics, and Clinical Pathology 304 Pillsbury Bldg.
- WINFORD P. LARSON, M.D., Assistant Professor of Bacteriology  
614 9th Ave. S. E.
- WILLIAM F. LASBY, B.A., D.D.S., Associate Professor of Prosthetic Den-  
tistry and Orthodontia 425 Walnut St. S. E.
- HARRY C. LAWTON, D.D.S., Associate Professor of Prosthetic Dentistry,  
Orthodontia, and Dental Metallurgy 1064 Lombard Ave., St. Paul
- THOMAS G. LEE, B.S., M.D., Professor of Comparative Anatomy  
509 E. River Road
- ELIAS P. LYON, Ph.D., M.D., Professor of Physiology and Director of  
the Department 421 Union St. S. E.
- WILLIAM McDUGALL, D.D.S., Assistant Professor in Crown and Bridge  
Work 521 Syndicate Bldg.
- RICHARD S. MAYBURY, D.D.S., Assistant Professor in Operative Dentistry  
1931 4th Ave. S.
- HERMAN A. MAVES, D.D.S., Associate Professor of Operative Dentistry  
505 Donaldson Bldg.
- THOMAS W. MITCHELL, Ph.D., Assistant Professor of Business Admin-  
istration 2349 Bourne Ave., St. Paul
- FORREST H. ORTON, D.D.S., Professor of Crown and Bridge Work  
653 Goodrich Ave., St. Paul
- ALFRED A. PAGENKOPF, D.D.S., Associate Professor of Crown and Bridge  
Work 1482 Grand Ave., St. Paul
- MARK O. PATTRIDGE, D.D.S., Assistant Professor in Operative Dentistry  
802 E. Lake St.
- CARL H. PETRI, D.D.S., Assistant Professor in Prosthetic Dentistry and  
Dental Anatomy 1301 E. Franklin
- GEORGE W. REYNOLDS, D.D.S., Associate Professor of Crown and Bridge  
Work 3811 10th Ave. S.
- HAROLD E. ROBERTSON, B.A., M.D., Associate Professor of Pathology and  
Acting Director of the Department 507 Essex St. S. E.
- WILLIAM A. ROLL, D.D.S., Assistant Professor in Crown and Bridge Work  
521 Syndicate Bldg.
- CHARLES E. RUDOLPH, D.D.S., Assistant Professor in Prosthetic Dentistry  
and Dental Anatomy
- JOSEPH F. SHELLMAN, D.D.S., Assistant Professor in Operative Dentistry  
903 Lowry Bldg., St. Paul
- RICHARD E. SCAMMON, Ph.D., Associate Professor of Anatomy  
200 Harvard St. S. E.
- FREDERICK H. SCOTT, Ph.D., M.B., D.Sc., Associate Professor of Phys-  
iology 1307 6th St. S. E.



- FRANK W. SPRINGER, E.E., Professor of Electrical Engineering  
826 Delaware St. S. E.
- DAVID F. SWENSON, B.S., Associate Professor of Psychology  
979 14th Ave. S. E.
- JAMES M. WALLS, D.M.D., Professor of Operative Dentistry  
828 Lowry Bldg., St. Paul
- OSCAR A. WEISS, D.M.D., Professor of Prosthetic Dentistry and Orthodontia  
1602 Fremont Ave. N.
- AMOS S. WELLS, B.A., D.D.S., Associate Professor of Crown and Bridge Work  
Berkeley Hotel
- CHARLES WIETHOFF, D.D.S., Associate Professor of Crown and Bridge Work  
716 Donaldson Bldg.
- M. RUSSELL WILCOX, M.D., Assistant Professor of Physiology  
802 Donaldson Bldg.
- WILLIAM F. ALLEN, M.A., Instructor in Histology and Embryology  
3352 Prospect Terrace S. E.
- BERT G. ANDERSON, D.D.S., Instructor in Prosthetic Dentistry and Orthodontia  
923 Lowry Bldg., St. Paul
- C. H. BEERS, D.D.S., Instructor in Operative Dentistry  
828 Lowry Bldg., St. Paul
- EDMUND T. DANA, Ph.D., Instructor in Psychology  
419 6th St. S. E.
- MAX E. ERNST, LL.B., D.D.S., Instructor in Operative Dentistry and Dental Jurisprudence  
614 Lowry Bldg., St. Paul
- WILLIAM A. GREY, D.D.S., Instructor in Operative Dentistry  
923 Lowry Bldg., St. Paul
- MARY V. HARTZELL, D.M.D., Instructor in Comparative Dental Anatomy and Oral Surgery  
1224 Mary Place
- A. T. HENRICI, M.D., Instructor in Bacteriology  
2443 Garfield Ave. S.
- FRANCIS B. KINGSBURY, Ph.D., Instructor in Physiology and Physiologic Chemistry  
209 State St. S. E.
- WOLF KRITCHEVSKY, Ph.D., Instructor in Chemistry  
908 Logan Ave. N.
- H. J. LEONARD, B.A., D.D.S., Instructor in Oral Surgery  
515 Syndicate Bldg.
- J. F. MCCLENDON, Ph.D., Instructor in Physiology  
1307 6th St. S. E.
- HERBERT C. NELSON, D.D.S., Instructor in Crown and Bridge Work  
921 Lowry Bldg., St. Paul
- C. J. V. PETTIBONE, Ph.D., Instructor in Physiology and Physiologic Chemistry  
112 Church St. S. E.
- E. K. STRACHAN, Ph.D., Instructor in Chemistry  
826 University Ave. S. E.
- ROBERT T. THOMPSON, D.D.S., Instructor in Prosthetic Dentistry  
1015 13th Ave. S. E.
- MARGARET WARWICK, B.S., M.D., Instructor in Pathology  
1516 7th St. S. E.
- ANDREW J. WEISS, Instructor in Technics  
3708 Stevens Ave.

## ASSISTANTS

HERBERT BUSCHER, Assistant in Anatomy  
WALTER E. CAMP, B.A., Assistant in Histology  
ROY E. CRUZEN, Assistant in Physiology  
R. W. DELTON, Assistant in Prosthetic Dentistry  
R. R. HENRY, Assistant in Dental Anatomy  
A. H. NOBBS, Assistant in Operative Dentistry  
C. H. PASKE, Assistant in Crown and Bridge Work  
LYLE ROBERTS, Assistant in Physiology

## GENERAL INFORMATION

### CURRICULUM

#### *Three Year Course*

This course in the college leads to the degree of Doctor of Dental Surgery. It covers a period of three years collegiate study, each year representing nine months in actual attendance. This course will not be offered after the year of 1915-16.

#### *Four Year Course*

This course in the College of Dentistry also leads to the degree of Doctor of Dental Surgery and covers a period of four years collegiate study. It is optional in 1915 and required in 1916.

For statements of entrance requirements, registration and fees, see Bulletin of General Information.

For schedule of lectures, announcements, changes in college rules, etc., see bulletin board. The Rules for the Guidance of Students are printed in a separate booklet; in this will also be found a list of the required instruments.

### ONE-YEAR ELECTIVE COURSE

It is recommended that after the completion of the prescribed course all students devote one year of study to advanced technical subjects in dentistry, medicine, other sciences, or art.

### COMBINED ACADEMIC-DENTISTRY COURSE

The first three years of the Arts and Dentistry course are given in the College of Science, Literature, and the Arts and the last three years in the College of Dentistry. It leads to the degree of Bachelor of Arts in four years and the degree of Doctor of Dental Surgery in six years.

Students registering in this course must, before completing their registration, choose a major line of work and secure the signature of an adviser in that department. In order to complete the academic portion of their work they must obtain ninety (90) credits, including a major and two minors, one in each of the groups A, B, C (see Bulletin of the College of Science, Literature, and the Arts); and they must have an average of *good* in at least one-half of their work. The third year of Dentistry counts as equivalent to thirty (30) credits toward the B.A. degree, provided the student receives an average of *good* in one-half of such year's work.

No student may be admitted to the College of Dentistry as a candidate for the degrees of Bachelor of Arts and Doctor of Dental Surgery until he has satisfied the foregoing requirements.

## SUMMER SESSION

A Summer Course of two months is offered in the Departments of Anatomy, Chemistry, Crown and Bridge Work, Operative Dentistry, Orthodontia, Physiology, and Prosthetic Dentistry.

## GRADUATE WORK

Instruction in all the departments of the College of Dentistry will be given to graduate practitioners upon registration for not less than one quarter of the College year.

Graduate Students must comply with the rules and regulations of the College of Dentistry.

## MILITARY DRILL

Beginning with the year 1915-1916 Military Drill will be required of all men in the freshman and sophomore classes.

## PHYSICAL EDUCATION

A course is offered in Physical Education for Men and Women.

## RULES AND REGULATIONS

*Examinations, Standings, and Conditions*

No student with an entrance condition will be allowed to register for any second-year subject, nor will any student with any first-year condition or failure be allowed to register for a third-year subject.

No student will be allowed to omit any freshman work in order to make up entrance conditions, except by special permission of the department affected.

Students will not be permitted to substitute private work in any branch for the regular college courses.

Final examination in every required subject is held at the close of the work at the end of the semester or quarter, according to the extent of the course given. Opportunity is offered to remove second semester conditions at the opening of the school year in September. Examinations for the removal of first semester conditions are offered at the close of the Easter recess. The examinations at the end of semester or quarter are only for those who are taking the courses, while the condition examinations are only for those who are attempting to remove conditions.

The final standing of any student in a given subject shall be determined as the result of (a) practical work (laboratory or clinical), (b) recitations, and (c) oral or (d) written examinations. All of these factors shall be taken into consideration in making up the final grading in any subject.

Students' standings shall be determined at the end of the year by a conference of the heads of the departments in which the work is pursued during that year.

All standings shall be reported officially to and from the Registrar's Office at the end of the year.

A uniform marking system has been adopted for the whole University. Four passing grades, indicated by the symbols *A*, *B*, *C*, and *D*, represent differing degrees of merit. The symbol *E* represents a condition, which may be removed by examination and by such supplementary work as the department imposing it may require. *F* stands for a failure and calls for a repetition of the work in course. *I* stands for incomplete and grants the student further time for the completion of the required work.

Conditions must be removed at the beginning of the school year in September. No student who has any conditions unremoved at the close of this examination is allowed to continue with his class without the express permission of the Dean upon the recommendation of the department concerned.

A condition not removed at the first opportunity becomes a failure subject to the rules governing failures.

Failures necessitate the taking of the work again in class.

A student carrying less than the complete schedule of work may pay fees on a clock-hour basis.

A student who is conditioned in the majority of the subjects given in any year will become a *failed* student and must repeat the entire work of that year.

Students who carry *failures* into a succeeding year may find a resultant conflict of study hours; in that event they will give preference to the unfinished studies of the lower conflicting course.

Any student reported below grade in sixty per cent of his work at the middle or close of the first semester or middle of the second semester shall be dropped from the rolls and shall not be allowed to re-enter until the opening of the following year.

*Probation.*—Such student shall then be allowed to enter on probation; and, if reported by the middle of the semester or after as delinquent in two or more subjects, he shall be dropped without further action for that year.

*Work limited.*—Students pursuing any continuous subject who have done such poor work in the first semester as to receive a condition or failure in such subject, shall not be allowed to elect another subject in place of that in which the condition or failure was received, but shall be required to devote their full time to the remaining subjects of the course.

Exception to this rule shall be made only by the Committee on Students' Work after full investigation.

*Electives.*—A student may elect a subject in another department as a substitute for the elective in the course of study on consent of the Committee on Students' Work.

#### *Attendance and Discipline*

All lectures, laboratory and infirmary courses and clinics must be taken in full and must invariably be entered upon during the week in which they begin.

All students are required to provide themselves with instruments, books, tools, and materials as prescribed by the college.

Tardiness and absences are controlled by the principle that each student must do the full work of the course.

No student whose absences in any semester exceed four weeks in the aggregate shall be admitted to final examination without special permission of the Students' Work Committee.

Any student's registration may be refused or cancelled by the Registrar at the request of the Students' Work Committee on account of absences, indifference to study, poor scholarship, disorderly or immoral conduct, and for dishonesty in classroom or laboratory work.

The practice of dentistry by students, except under the direct supervision of a preceptor, is prohibited by law in the State of Minnesota. Students violating this law will be suspended or expelled.

Except in cases of required work students are not allowed to obligate themselves in the Military Department, band, or other college activities, without permission from the Faculty.

### *Eligibility Regulations*

No student shall take part in any public performance of a dramatic or musical club, or be eligible to election or appointment to official positions upon the boards of student publications, or take part in intercollegiate debates or oratorical contests, unless he has a clear record at the time.

### ADVANCED STANDING

Applicants for advanced standing must present satisfactory evidence of possessing the preliminary educational qualifications required of the class they desire to enter.

They must also satisfy the professors of the branches from which they wish to be exempt, that the work pursued by them in other institutions was equal in scope and amount to that passed by the class they propose to enter.

No credits are accepted unconditionally, the Faculty reserving the privilege of examining any applicant when deemed necessary.

All certificates pertaining to advanced standing must be presented to the Dean, who will send them to the respective professors for acceptance or report of further requirements for acceptance.

### REQUIREMENTS FOR GRADUATION

A candidate for the degree of Doctor of Dental Surgery must be twenty-one years of age, of good moral character, and, after having satisfied all the requirements for admission to the college, must have complied with all the rules and regulations of the college and obtained regular credit for all subjects of the entire course.



# COURSE OF STUDY

## THREE-YEAR COURSE

Freshman Year	<i>First Semester</i>		<i>Second Semester</i>	
	Credits	Hours	Credits	Hours
Anatomy, Dental .....	2	64	2	64
Anatomy, Gross .....	6	192	4	128
Anatomy, Histology and Embryology....			4	128
Chemistry, General and Qualitative.....	6	144		
Chemistry, Organic .....			3	96
Prosthetic Technique .....	4	160	4	160
Junior Year				
Crown and Bridge Technique.....	4	160	2	96
Metallurgy, Dental .....	1	16		
Orthodontia Technique .....			3	144
Operative Technique .....	4	160		
*Pathology and Bacteriology.....			4	128
Pathology and Therapeutics.....	1	16	1	16
Pharmacology, General .....			2	32
†Physiology and Physiologic Chemistry.	5	144		
Practice, Clinical .....			9	368
Prosthetic Technique .....	4	160		
Senior Year				
Conference Course in Theory and Prac- tice .....	1	16	1	16
Crown and Bridge Lectures and Rec....	1	16	1	16
Operative Dentistry Lec. and Rec.....	1	16	1	16
Oral Surgery Lec. and Rec.....	1	16	1	16
Orthodontia, Lec. and Rec.....	1	16	1	16
Practice, Clinical .....	12	576	12	576
Electives				
Anatomy, Comparative Dental.....	3	48		
Bacteriology, Special .....	3	96		
Economics, Elementary .....	3	48		
Electricity and Radiography, Dental....	3	72		
Metallography, Dental .....	3	48		
Pathology, Advanced .....	3	96		
Pharmacology, Special .....	3	48		
Psychology, Elementary .....	3	48		

\*Offered in the first semester for the class of 1915-1916

†Not offered in 1915-1916

## FOUR-YEAR COURSE

Optional 1915—Required 1916

Freshman Year	<i>First Semester</i>		<i>Second Semester</i>	
	Credits	Hours	Credits	Hours
Anatomy, Dental .....			2	64
Animal Biology .....	3	96	3	96
*Chemistry, Advanced Gen. and Qualitative .....	3	96	3	96
English, Rhetoric .....	3	48	3	48
Physics or Technical Drawing.....	2 to 4	48 to 96	2 to 4	48 to 96
Prosthetic Dentistry .....	4	160	2	64
Sophomore Year				
Anatomy, Gross .....	4	128	4	128
Anatomy, Histology and Embryology...			4	128
Anatomy, Dental .....	4	128		
Chemistry, Organic .....	3	96		
Orthodontia Technique .....			2	96
Physiology and Physiological Chemistry			5	160
Prosthetic Technique .....	4	192		
Junior Year*				
Bacteriology, General and Special.....	4	128		
Crown and Bridge Technique.....	4	192		
Dental Metallurgy .....	1	16		
Materia Medica and Therapeutics.....			3	48
Operative Dentistry Lec. and Rec.....	1	16	1	16
Operative Dentistry Technique.....	4	192		
Pathology, General and Special.....			4	128
Practice .....	2	96	10	480
Prosthetic Dentistry Lec. and Rec.....	2	32		
Senior Year				
Crown and Bridge Lec. and Rec.....	1	16	1	16
†Elective .....	3	48		
Operative Dentistry Lec. and Rec.....	1	16		
Oral Surg., Clin. Path. and Radiog. Lec. and Rec. ....			2	32
Orthodontia Lectures and Recitations...	1	16	1	16
Practice .....	12	576	12	576
Theory and Practice of Dentistry and Conference Course in Applied Economics, Jurisprudence, Psychology, Ethics, and Art.....			2	32

The requirements for admission are the same as for admission to the freshman class of the College of Science, Literature, and the Arts, and should include one unit of General Chemistry. Manual Training is recommended.

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\*Students who have not had Elementary General Chemistry may take this in the Summer School preceding the Freshman Year, or during the Freshman Year, and make up the Advanced General and Qualitative in the Summer School preceding the Sophomore Year, or, if the number is large enough to warrant it, a separate section will be formed taking the Elementary General Chemistry in the first semester and Advanced General and Qualitative in the second semester.

†At least three credits must be obtained in Psychology, Economics, or substitute subjects approved by the Students' Work Committee and may be taken in the first or second semester, evening course or summer school.

One credit hour may be either one recitation hour through one semester, two laboratory hours with outside work, or three laboratory hours without outside work. One semester equals sixteen weeks, one week, forty-eight hours.

## FEES

### THREE-YEAR COURSE

Freshman year	
Annual incidental fee.....	\$175.00
Instruments .....	100.00
Books .....	25.00
Junior year	
Annual incidental fee.....	\$175.00
Instruments .....	175.00
Books .....	35.00
Senior year	
Annual incidental fee.....	\$150.00
Instruments .....	25.00
Books .....	15.00

### FOUR-YEAR COURSE

Freshman year.	
Annual incidental fee*.....	\$75.00
Sophomore year	
Annual incidental fee*.....	175.00
Junior year	
Annual incidental fee*.....	175.00
Senior year	
Annual incidental fees*.....	150.00

\*Instrumental and books similar to Three-year Course

## DEPARTMENTAL STATEMENTS

Odd numbers indicate first-semester courses; even numbers, second-semester courses. A combination of the two (e. g., 5-6) indicates courses continuing through the year. In the case of courses repeated the second semester, the suffix *a* indicates first semester; the suffix *b*, second semester.

### ANATOMY

Professors CLARENCE M. JACKSON, THOMAS G. LEE; Associate Professor CHARLES A. ERDMANN; Instructor WILLIAM F. ALLEN; Assistants WALTER E. CAMP, CHESTER A. STEWART, HERBERT BUSCHER.

#### COURSES

No.	Title	Hrs.	Credits	Offered to	Prereq. courses
1-2.	Gross Anatomy .....	8	10	Fr.	None
4.	Histology and Embryology.....	8	4	Fr.	1

1-2. GROSS ANATOMY. Lectures, recitations, demonstrations, and laboratory work in gross human anatomy. Includes descriptive anatomy, with special emphasis upon the skull and the digestive tract; later a complete and careful dissection of the head and neck. Open only to dental students and especially arranged for their needs. JACKSON, ERDMANN, STEWART, BUSCHER.

3. HISTOLOGY AND EMBRYOLOGY. Lectures, recitations, laboratory work, and demonstrations. Special emphasis will be laid upon the knowledge of the development and structure of the head, mouth, jaw, teeth, and other portions of the digestive system. LEE, ALLEN, CAMP.

### CHEMISTRY

Professor GEORGE B. FRANKFORTER; Assistant Professor IRA H. DERBY; Instructors E. K. STRACHAN, WOLF KRITCHEVSKY.

#### COURSES

No.	Title	Hrs.	Credits	Offered to	Prereq. courses
31.	General Chem. & Qual. Anal....	9	6	Fr.	Gen. Chem.
32.	Organic Chemistry.....	6	3	Fr.	31

31. GENERAL CHEMISTRY AND QUALITATIVE ANALYSIS. A review of the principles of inorganic chemistry and an introduction to physical chemistry, especially as applied to solutions, alloys, etc.; an introduction to qualitative analysis, including the common metals and acids, STRACHAN and Assistants.

32. ORGANIC CHEMISTRY. An outline of the chemistry of carbon, including the preparation of some of the more important organic compounds. Special emphasis is laid on those substances used in medicine. DERBY, KRITCHEVSKY, and Assistants.

## CROWN AND BRIDGE WORK

Professor FORREST H. ORTON; Associate Professors PETER J. BREKHUS, ALFRED A. PAGENKOPF, GEORGE W. REYNOLDS, AMOS S. WELLS, CHARLES A. WIETHOFF; Assistant Professors WILLIAM McDUGALL, WILLIAM A. ROLL; Instructors HERBERT C. NELSON, CARL OTTO.

## COURSES

No.	Title	Hrs.	Credits	Offered to	Prereq. courses
1.	Crown & Bridge Technique.....	10	4	Jr.	Dent. Anat. 2
2.	Crown & Bridge Technique.....	10	4	Jr.	1
3.	Crown & Bridge Practice.....	13	5	Sr.	2
4.	Crown & Bridge Practice.....	13	5	Sr.	3

1. CROWN AND BRIDGE TECHNIQUE. A course of lectures, demonstrations, and laboratory work that includes all the more important forms of crowns and bridges. WELLS, REYNOLDS, NELSON.
2. CROWN AND BRIDGE TECHNIQUE. Continuation of Course 1 as outlined above. WELLS, REYNOLDS, NELSON.
3. CROWN AND BRIDGE PRACTICE. A course of lectures and clinical practice covering the entire field of crown and bridge work. ORTON, BREKHUS, PAGENKOPF, McDUGALL, ROLL.
4. CROWN AND BRIDGE PRACTICE. Continuation of Course 3 as outlined above. ORTON, BREKHUS, PAGENKOPF, McDUGALL, ROLL.

## DENTAL ANATOMY

Associate Professor GEORGE M. DAMON; Assistant Professors OSCAR COOPERMAN, CARL O. FLAGSTAD, CARL H. PETRI, CHARLES E. RUDOLPH.

## COURSES

No.	Title	Hrs.	Credits	Offered to	Prereq. courses
1.	Dental Anatomy.....	4	2	Fr.	None
2.	Dental Anatomy.....	4	2	Fr.	1

1. DENTAL ANATOMY. The course will consist of lectures, recitations, and such laboratory work as drawing, dissection, modeling, and carving of the teeth. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH.
2. DENTAL ANATOMY. Continuation of Course 1 as outlined above. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH.

## DENTAL METALLURGY

Professor ALFRED OWRE; Associate Professor HARRY C. LAWTON.

## COURSES

No.	Title	Hrs.	Credits	Offered to	Prereq. courses
1.	Dental Metallurgy .....	1	1	Jr.	Chem. 31, 32

1. DENTAL METALLURGY. Lectures, recitations, and demonstrations, taking up the most important metals with special reference to those used in dentistry. OWRE, LAWTON.



## MILITARY SCIENCE AND TACTICS

Professor and Commandant BERNARD LENTZ; Assistant Commandant and  
Brigade Adjutant WALTER F. RHINOW; Band Instructor BERT ROSE.

## COURSES

No.	Drill	Credits	Offered to	Prereq. courses
1-2.	Military Drill .....	None	Fr.,	None
3-4.	Military Drill .....	None	Soph.	1 yr. Drill
5-6.	Military Drill .....	3*	Jr., sr.	2 yrs. Drill
3.	Military Science .....	2†	Jr., sr.	2 yrs. Drill

1-6. MILITARY DRILL. Required of all men in the freshman and sophomore classes. Students are cautioned to report for the first drill and inform themselves of the requirements of the department.

1-2. Freshman: Practical instruction in schools of the soldier, company, and battalion; signals, ceremonies; first aid.

3-4. Sophomore: Practical and theoretical instruction in schools of the company and battalion; advance and rear guard drill; practical and theoretical instruction in guard duty. Gallery practice. Ceremonies.

5-6. May be taken voluntarily by others outside of the freshman and sophomore classes. No credit will be allowed for such drill for less than one year.

8. MILITARY SCIENCE. Instruction in advance and rear guards, outposts, reconnaissance, camping, duties of company commander, articles of war, records.

\*No student may receive more than a total of six credits for elective work in both Physical Education and Military Drill.

†If taken in connection with Course 5-6.

## OPERATIVE DENTISTRY

Professors JAMES M. WALLS, HENRY S. GODFREY; Associate Professors ROBERT O. GREEN, HERMAN A. MAVES; Assistant Professors RALPH W. COUNTRYMAN, NORMAN J. COX, R. S. MAYBURY, MARK O. PATTRIDGE, JOSEPH F. SHELLMAN; Instructors C. H. BEERS, MAX E. ERNST, WILLIAM A. GREY, J. M. LITTLE.

## COURSES

No.	Title	Hrs.	Credits	Offered to	Prereq. courses
1.	Operative Technique .....	10	4	Jr.	Dent. Anat. 2
2.	Operative Practice .....	10	4	Jr.	1
3.	Operative Practice .....	13	5	Jr., sr.	2
4.	Operative Practice .....	13	5	Jr., sr.	3

1. OPERATIVE TECHNIQUE. This course consists of lectures, recitations, demonstrations, and laboratory work of a technical nature. WALLS, GREEN, COUNTRYMAN, ERNST, MAYBURY, PATTRIDGE, SHELLMAN, BEERS, LITTLE.

2. OPERATIVE PRACTICE. This course consists of lectures, recitations, and clinical practice. WALLS, GREEN, COUNTRYMAN, ERNST, MAYBURY, PATTRIDGE, SHELLMAN, BEERS, LITTLE.

3. OPERATIVE PRACTICE. A course of lectures, recitations, conference work, demonstrations, and clinical practice covering the entire field of operative dentistry. WALLS, GODFREY, MAVES, COX, GREY.
4. OPERATIVE PRACTICE. Continuation of Course 3 as outlined above. WALLS, GODFREY, MAVES, COX, GREY.

### ORAL SURGERY

Professor THOMAS B. HARTZELL; Assistant Professors CHARLES A. GRIFFITH, RAY R. KNIGHT; Instructors H. J. LEONARD, MARY V. HARTZELL.

#### COURSES

No.	Title	Hrs.	Credits	Offered to	Prereq. courses
1. Oral Surgery	.....	4	3	Sr.	Path. & Ther. 2
2. Oral Surgery	.....	4	2	Sr.	1

1. ORAL SURGERY. This course is taught by lectures, recitations, and practical demonstrations covering the field of oral diseases. Such subjects as physical diagnosis, anesthesia, and urinalysis are taught in connection with this course. HARTZELL, GRIFFITH, KNIGHT.
2. ORAL SURGERY. Continuation of Course 1 as outlined above. HARTZELL, GRIFFITH, KNIGHT.

### ORTHODONTIA

Professor OSCAR A. WEISS; Associate Professors WILLIAM F. LASBY, HARRY C. LAWTON; Assistant Professor CARL O. FLAGSTAD; Instructor BERT G. ANDERSON.

#### COURSES

No.	Title	Hrs.	Credits	Offered to	Prereq. courses
2. Orthodontia Technique	.....	9	3	Jr.	Pros. Tech. 3
3. Orthodontia Practice	.....	6½	3½	Sr.	1
4. Orthodontia Practice	.....	6½	2½	Sr.	2

2. ORTHODONTIA TECHNIQUE. A course of lectures, recitations, and laboratory work in the technique of steel and the making of regulating appliances. WEISS, LAWTON, FLAGSTAD, WEISS.
3. ORTHODONTIA PRACTICE. A course of lectures, recitations, and clinical work on the theory and practice of orthodontia. Every student is required to treat at least one irregularity of the teeth. WEISS, LASBY, ANDERSON.
4. ORTHODONTIA PRACTICE. A continuation of Course 2 as outlined above. WEISS, LASBY, ANDERSON.

### PATHOLOGY AND BACTERIOLOGY

Associate Professor HAROLD E. ROBERTSON; Assistant Professors E. T. BELL, WINFORD P. LARSON; Instructors ARTHUR T. HENRICI, MARGARET WARWICK.

No.	Title	COURSES		Offered to	Prereq. courses
		Hrs.	Credits		
1.	Bacteriology & Pathology*.....	8	4	Jr.	None

1. A course of lectures combined with laboratory exercises and demonstrations designed to illustrate the general principles and a few special applications of Pathology and Bacteriology. ROBERTSON, BELL, LARSON, HENRICI, WARWICK.

\*Offered in First Semester for class of 1915-1916

## PATHOLOGY AND THERAPEUTICS

Professor THOMAS B. HARTZELL, H. J. LEONARD.

No.	Title	COURSES		Offered to	Prereq. courses
		Hrs.	Credits		
1.	Pathology & Therapeutics.....	1	1	Jr.	None
2.	Pathology & Therapeutics.....	1	1	Jr.	1

1. PATHOLOGY AND THERAPEUTICS. These subjects are taught by lectures and recitations involving general pathology as a foundation of the special pathology of the oral cavity; paying particular attention to the therapeutic requirements of the lesions of the mouth and teeth. The work in pathology is supplemented by laboratory work under the care of the chair of pathology, Department of Medicine. HARTZELL, LEONARD.
2. PATHOLOGY AND THERAPEUTICS. Continuation of Course 1 as outlined above. HARTZELL, LEONARD.

## PHARMACOLOGY

Professor ARTHUR D. HIRSCHFELDER; Associate Professor EDGAR D. BROWN; Assistant Professor ROBERT A. HALL.

No.	Title	COURSES		Offered to	Prereq. courses
		Hrs.	Credits		
2.	General Pharmacology .....	2	2	Jr.	None
2.	Experimental Pharmacology.....	2	..	Jr.	1

2. GENERAL PHARMACOLOGY as applied to dentistry comprises a study of the properties, action, and therapeutic application of the principal drugs used in dentistry with exercises in prescription writing. HALL.
2. EXPERIMENTAL PHARMACOLOGY. Laboratory exercises affording the student the opportunity for observing the effects of the principal types of drugs upon the animal will be given to sections of the class in connection with Course 1. HIRSCHFELDER, BROWN, HALL.

## DEPARTMENT OF PHYSIOLOGY

Professor ELIAS POTTER LYON; Associate Professors RICHARD OLDING BEARD, FREDERICK H. SCOTT; Assistant Professors M. RUSSELL WILCOX; Instructors C. V. J. PETTIBONE, J. J. MCCLINDON; Assistants ROY E. CRUZEN, LYLE ROBERTS.

No.	Title	COURSES		Offered to	Prereq. courses
		Hrs.	Credits		
1.	Physiology & Physiologic Chemistry .....	9	5	Jr.	Chem. 31
1.	PHYSICAL AND PHYSIOLOGIC CHEMISTRY.* A course of lectures and laboratory exercises covering the essentials of Physiology and Physiologic Chemistry. LYON, SCOTT, PETTIBONE.				

\*Not offered in 1915-1916.

## PROSTHETIC DENTISTRY

Professor OSCAR A. WEISS; Associate Professors GEORGE M. DAMON, WILLIAM F. LASBY, HARRY C. LAWTON; Assistant Professors OSCAR COOPERMAN, CARL O. FLAGSTAD, CARL H. PETRI, CHARLES E. RUDOLPH; Instructors BERT C. ANDERSON, ROBERT THOMPSON, ANDREW J. WEISS.

No.	Title	COURSES		Offered to	Prereq. courses
		Hrs.	Credits		
1.	Prosthetic Technique .....	5	2	Fr.	None
2.	Prosthetic Technique .....	7	3	Fr.	1
3.	Prosthetic Technique .....	10	4	Jr.	2
4.	Prosthetic Practice .....	7	3	Jr.	3
5.	Prosthetic Practice .....	4½	1½	Sr.	4
6.	Prosthetic Practice .....	4½	1½	Sr.	5

1. PROSTHETIC TECHNIQUE. This course consists of lectures and technic work in the laboratory, comprising impression materials and their uses and the simpler processes of plate work. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH.
2. PROSTHETIC TECHNIQUE. Continuation of Course 1 as outlined above. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH.
3. PROSTHETIC TECHNIQUE. The course consists of lectures, recitations, and laboratory work covering the principles and practice of plate work. WEISS, LAWTON, ANDERSON, WEISS.
4. PROSTHETIC PRACTICE. A course of lectures, recitations, and clinical work covering the simpler forms of prosthetic practice. WEISS, LASBY, FLAGSTAD.
5. PROSTHETIC PRACTICE. A course of lectures, recitations, and clinical work, covering cleft palate and other special cases in addition to the general prosthetic practice. WEISS, LASBY, FLAGSTAD.
6. PROSTHETIC PRACTICE. Continuation of Course 5 as outlined above. WEISS, LASBY, FLAGSTAD.

## THEORY AND PRACTICE OF DENTISTRY

Professor ALFRED OWRE; Instructor MAX E. ERNST.

No.	Title	COURSES		Offered to	Prereq. courses
		Hrs.	Credits		
2.	Theory and Practice of Dentistry	1	2	Sr.	None

2. THEORY AND PRACTICE OF DENTISTRY. A lecture and conference course in applied Economics, Jurisprudence, Psychology, Ethics and Art. OWRE, ERNST, and Associates.

## ELECTIVES

NOTE.—One elective to be taken during either the junior or senior year.

## COMPARATIVE DENTAL ANATOMY

Instructor MARY V. HARTZELL.

No.	Title	COURSES		Offered to	Prereq. courses
		Credits			
1-2.	Comparative Dental Anatomy..	3		Jr., sr.	Anat. 1, 2, 3

- 1-2. COMPARATIVE DENTAL ANATOMY. A course embracing the comparative study of animal life, giving special attention to the number, form, and arrangement of the teeth. HARTZELL.

## DENTAL ELECTRICITY AND RADIOGRAPHY

Professor FRANK W. SPRINGER; Assistant Professor RAY R. KNIGHT.

No.	Title	COURSES		Offered to	Prereq. courses
		Credits			
151.	Dental Electricity .....	2		Jr., sr.	None
2.	Radiography .....	1		Jr., sr.	151

151. DENTAL ELECTRICITY. A course of lectures, recitations, and demonstrations on the elements of electricity and magnetism, the construction, use, care, and operation of batteries, motors, dynamos, switch boards, and other electrical appliances used in dental offices. SPRINGER.
2. RADIOGRAPHY. This course consists of the making, developing, and reading of dental radiographs, together with the essentials of general radiology. The students secure individual instruction and have the opportunity of doing the actual work. KNIGHT.

## DENTAL METALLOGRAPHY

Assistant Professor S. L. HOYT.

No.	Title	COURSES		Offered to	Prereq. courses
		Hrs.	Credits		
163.	Dental Metallography .....	3	3	Jr., sr.	Dent. Met. 1

163. DENTAL METALLOGRAPHY. A course in the study of Dental Alloys from the standpoint of Metallography.

## ECONOMICS

Assistant Professors J. FRANKLIN EBERSOLE, THOMAS WARNER MITCHELL.

No.	Title	COURSES		Offered to	Prereq. courses
		Credits			
1a.	Elements of Economics.....	3		Jr., sr.	None
1b.	Elements of Economics.....	3		Jr., sr.	None

1a. ELEMENTS OF ECONOMICS. A course of economic theory with special reference to present-day economic and social problems. MITCHELL, EBERSOLE.

1b. ELEMENTS OF ECONOMICS. Same as Course 1a.

## PSYCHOLOGY

Associate Professor DAVID F. SWENSON; Instructor EDMUND T. DANA.

No.	Title	COURSES		Offered to	Prereq. courses
		Credits			
5a.	Elements of Psychology.....	3		Soph., jr., sr.	None
5b.	Elements of Psychology.....	3		Soph., jr., sr.	None

5a. ELEMENTS OF PSYCHOLOGY. This course is for those who do not expect to take further work in psychology, but wish a brief outline of the subject, either as preparatory for work in philosophy or as part of their general education. The significance of mental facts for problems in philosophy. SWENSON, DANA.

5b. ELEMENTS OF PSYCHOLOGY. Same as Course 5a.

## ADVANCED BACTERIOLOGY

## ADVANCED PATHOLOGY

## SPECIAL MATERIA MEDICA

NOTE.—Courses in the above subjects will be arranged along the lines in which students elect to specialize.



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McGuzd  
1916/17

# Bulletin of The University of Minnesota

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## THE COLLEGE OF DENTISTRY

UNIVERSITY OF ILLINOIS

1916-1917

OCT 20 1916

PRESIDENT'S OFFICE



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1916							1917													
JULY							JANUARY							JULY						
Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa	Su	Mo	Tu	W	Th	Fr	Sa
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31	..	..	..	..	..	..	..	..	..	..	..	..	..	30	31	..	..	..	..	..

# UNIVERSITY CALENDAR

1916-1917

The University year covers a period of thirty-eight weeks. Commencement Day is always the second Thursday in June.

1916

September	13	Wednesday	Registration closes except for new students
September	13-20	Week	Fees payable except for new students
September	19-26	Week	Examinations for the removal of conditions (except Colleges of Agriculture and Forestry), entrance examinations, registration of new students, and payment of fees
September	27	Wednesday	First semester begins
October	2	Monday	Agricultural College, farm experience examinations
October	2	Monday	School of Agriculture, first term begins
October	5	Thursday	Senate meeting, 4:00 p.m.
November	6	Monday	Dairy School opens
November	7	Tuesday	Election day; a holiday
November	22	Wednesday	Medical School second quarter begins
November	29	Wednesday	Thanksgiving recess begins 9:00 p.m.
December	2	Saturday	Dairy School closes
December	4	Monday	Thanksgiving recess ends 8:00 a.m.
December	4-9	Week	Second semester condition examinations, Colleges of Agriculture and Forestry
December	4-9	Week	Short course for ice-cream makers
December	7	Thursday	Senate meeting, 4:00 p.m.
December	22	Friday	Christmas vacation begins 9:00 p.m.
December	22	Friday	School of Agriculture, first term closes

1917

January	1-6	Week	Farmers' Short Course
January	3	Wednesday	Christmas vacation ends 8:00 a.m.
January	3	Wednesday	School of Embalming begins, eight weeks' session
January	9	Tuesday	School of Agriculture, second term begins
January	24	Wednesday	Second semester registration closes, except for new students
January	29	Monday	Final examinations begin
January	31	Wednesday	Payment of fees for second semester closes, except for new students
February	1	Thursday	Senate meeting, 4:00 p.m.

February	5-6	Monday-Tues.	Registration and payment of fees for new students
February	7	Wednesday	Second semester begins
February	12	Monday	Lincoln's Birthday; a holiday
February	22	Thursday	Washington's Birthday; a holiday
March	28	Wednesday	School of Agriculture closes
April	2-7	Week	Junior Short Course
April	5	Thursday	Easter recess begins 9:00 p.m.
April	11	Wednesday	Easter recess ends 8:00 p.m.
April	11	Wednesday	Medical School fourth quarter begins
April	16-21	Week	Condition examinations in certain colleges
May	1	Tuesday	Traction Engineering Course begins
May	3	Thursday	Senate meeting, 4:00 p.m.
May	30	Wednesday	Memorial Day; a holiday
June	1	Friday	Final examinations begin 2:00 p.m.
June	9	Saturday	Second semester closes
June	10	Sunday	Baccalaureate service
June	11	Monday	Senior Class Day exercises
June	11-18	Week	Military Encampment, Fort Snelling
June	13	Wednesday	Alumni Day
June	14	Thursday	Forty-fifth Annual Commencement
June	15	Friday	Summer vacation begins
June	18	Monday	Summer Session begins

The University year for 1917-1918 will begin Tuesday, September 18.

# COLLEGE OF DENTISTRY

## FACULTY

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Practice of Dentistry and Dental Metallurgy University of Minnesota

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University of Minnesota

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tistry 401 Reid Corner

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612 9th Ave. S. E.

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CHARLES A. GRIFFITH, D.D.S., Associate Professor of Oral Surgery  
1917 Hamline Ave.



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906 5th St. S. E.
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428 Walnut St. S. E.
- WILLIAM H. KIRCHNER, B.S., Professor of Drawing and Descriptive Geometry  
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509 E. River Road
- BERNARD LENTZ, 1st Lieutenant, 21st Infantry, U. S. A., Professor of Military Science, Head of Department of Military Science and Tactics
- ELMER J. LUND, Ph.D., Assistant Professor of Zoology
- ELIAS P. LYON, Ph.D., M.D., Professor of Physiology and Director of the Department  
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1931 4th Ave. S.
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505 Donaldson Bldg.
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653 Goodrich Ave., St. Paul
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802 E. Lake St.
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1301 E. Franklin
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507 Essex St. S. E.
- WILLIAM A. ROLL, D.D.S., Assistant Professor in Crown and Bridge Work  
521 Syndicate Bldg.



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 CHARLES WIETHOFF, D.D.S., Associate Professor of Crown and Bridge Work 716 Donaldson Bldg.  
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 LILLIAN COHEN, Ph.D., Instructor in Chemistry 415 E. 14th St.  
 DAVID CROWTHER, Instructor in Dental Mechanics  
 MAX E. ERNST, LL.B., D.D.S., Instructor in Operative Dentistry and Dental Jurisprudence 614 Lowry Bldg., St. Paul  
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515 Syndicate Bldg.
- JOSEPH M. LITTLE, D.D.S., Instructor in Operative Dentistry  
1364 Summit Ave., St. Paul
- EVERETT E. MACGIBBON, D.D.S., Instructor in Crown and Bridge Work  
716 Donaldson Bldg.
- JOHN F. MCCLENDON, Ph.D., Instructor in Physiology 1307 6th St. S. E.
- WILLIAM C. NAEGELI, D.D.S., Instructor in Operative Dentistry  
1600 Western Ave.
- HERBERT C. NELSON, D.D.S., Instructor in Crown and Bridge Work  
921 Lowry Bldg., St. Paul
- CARL OTTO, D.D.S., Instructor in Crown and Bridge Work  
921 Lowry Bldg., St. Paul
- PAUL S. PARKER, D.D.S., Instructor in Prosthetic Dentistry and Dental  
Anatomy 310 Donaldson Bldg.
- CHAUNCEY J. V. PETTIBONE, Ph.D., Instructor in Physiology and Physi-  
ologic Chemistry 112 Church St. S. E.
- ALBERT C. POTTER, M.D., Instructor in Pathology and Bacteriology  
2735 3rd Ave. S.
- WALTER F. RHINOW, Assistant Commandant and Brigade Adjutant  
400 Oak St. S. E.
- BERT A. ROSE, Band Instructor 710 7th St. S. E.
- RUTCHER SKAGERBERG, B.S., Instructor in Drawing and Descriptive Geom-  
etry 722 13th Ave. S. E.
- EARL K. STRACHAN, Ph.D., Instructor in Chemistry  
826 University Ave. S. E.
- MARGARET WARWICK, B.S., M.D., Instructor in Pathology  
1516 7th St. S. E.
- ANDREW J. WEISS, Instructor in Technics 3708 Stevens Ave.

## ASSISTANTS

- HERBERT BUSCHER, Assistant in Anatomy
- WALTER E. CAMP, B.A., Assistant in Histology
- ROY E. CRUZEN, Assistant in Physiology
- RALPH W. DELTON, Student Assistant in Prosthetic Dentistry
- HOUGHTON HOLLIDAY, Assistant in Research
- JOHN A. KITTELSON, Assistant in Anatomy
- CHARLES H. PASKE, Student Assistant in Crown and Bridge Work
- CLARENCE I. LILLEHEI, Student Assistant in Operative Dentistry
- JAMES C. MCKINLEY, Assistant in Anatomy
- ADOLPH RINGOEN, Assistant in Animal Biology
- LYLE ROBERTS, Assistant in Physiology

RAY SHANNON, M.S., Assistant in Pathology and Bacteriology

HELEN SANBORN, Assistant in Animal Biology

CHESTER A. STEWART, Assistant in Anatomy

FLORIEN VAUGHN, Assistant in Anatomy

LEHMAN WENDELL, Student Assistant in Dental Anatomy

EARL C. WEST, Assistant in Research

## GENERAL INFORMATION

### CURRICULUM

The course in the College of Dentistry leads to the degree of Doctor of Dental Surgery and covers a period of four years collegiate study.

For statements of entrance requirements, registration, and fees, see Bulletin of General Information.

For schedule of lectures, announcements, changes in college rules, etc., see bulletin board. The Rules for the Guidance of Students are printed in a separate booklet; in this will also be found a list of the required instruments.

### COMBINED ACADEMIC-DENTISTRY COURSE

The first three years of the Arts and Dentistry course are given in the College of Science, Literature, and the Arts and the last three years in the College of Dentistry. It leads to the degree of Bachelor of Arts in four years and the degree of Doctor of Dental Surgery in six years.

Students registering in this course must, before completing their registration, choose a major line of work and secure the signature of an adviser in that department. In order to complete the academic portion of their work they must obtain ninety (90) credits, including a major and two minors, one in each of the groups A, B, C (see Bulletin of the College of Science, Literature, and the Arts); and they must have an average of *good* in at least one-half of their work. The third year of Dentistry counts as equivalent to thirty (30) credits toward the B.A. degree, provided the student receives an average of *good* in one-half of such year's work.

No student may be admitted to the College of Dentistry as a candidate for the degrees of Bachelor of Arts and Doctor of Dental Surgery until he has satisfied the foregoing requirements.

### ADMISSION

#### *General Requirements*

1. English, three units.
2. Chemistry,\* one unit, and Manual Training recommended.
3. Mathematics: Elementary Algebra, one unit; Plane Geometry, one unit.
4. Enough additional work to make in all fifteen units of which not more than four may be in Group F.

On account of the limited capacity of the College of Dentistry, not more than ninety freshmen can be admitted. Applications for admission should be in the Registrar's office not later than July 25.

\* Those who have had good training in preparatory Chemistry will take a combined course of ten credits in General Chemistry and Qualitative Analysis.

Candidates will be selected according to quantity and quality of preparation, and when necessary their fitness shall be determined by competitive examination and conference with the Student Work Committee.

All other qualifications being equal, residents of Minnesota will be given prior consideration for vacancies existing at the date of their application.

All freshmen students, entering the College of Dentistry must confer with the Dean of the College some time before their matriculation or immediately after.

## EXPENSES

Freshman year	
Annual incidental fee.....	\$100.00
Instruments .....	125.00
Books .....	25.00
Sophomore year	
Annual incidental fee.....	\$175.00
Instruments .....	200.00
Books .....	35.00
Junior year	
Annual incidental fee.....	\$175.00
Instruments .....	75.00
Books .....	25.00
Senior year	
Annual incidental fee.....	\$175.00
Instruments .....	25.00
Books .....	15.00

## SUMMER SESSION

A Summer Course of two months is offered in the Departments of Anatomy, Animal Biology, Bacteriology, Chemistry, Crown and Bridge Work, Dental Anatomy, Operative Dentistry, Orthodontia, Physiology, and Prosthetic Dentistry.

## GRADUATE WORK

Instruction in all the departments of the College of Dentistry will be given to graduate practitioners upon registration for not less than one quarter of the College year.

Graduate Students must comply with the rules and regulations of the College of Dentistry.

## MILITARY DRILL

Military Drill will be required of all men in the freshman and sophomore classes.

## PHYSICAL EDUCATION

A course is offered in Physical Education for Men and Women.

## RULES AND REGULATIONS

*Examinations, Standings, and Conditions*

No student with an entrance condition will be allowed to register for any second-year subject, nor will any student with any first-year condition or failure be allowed to register for a third-year subject.

No student will be allowed to omit any freshman work in order to make up entrance conditions, except by special permission of the department affected.

Students will not be permitted to substitute private work in any branch for the regular college courses.

Final examination in every required subject is held at the close of the work at the end of the semester or quarter, according to the extent of the course given. The examinations at the end of semester or quarter are only for those who are taking the courses, while the condition examinations are only for those who are attempting to remove conditions.

The final standing of any student in a given subject shall be determined as the result of (a) practical work (laboratory or clinical), (b) recitations, and (c) oral or (d) written examinations. All of these factors shall be taken into consideration in making up the final grading in any subject.

Students' standing shall be determined at the end of each quarter by a conference of the departments in which the work is pursued during that year.

All standings shall be reported officially to and from the Registrar's Office at the end of each semester.

A uniform marking system has been adopted for the whole University. Four passing grades, indicated by the symbols *A*, *B*, *C*, and *D*, represent differing degrees of merit. The symbol *E* represents a condition, which may be removed by examination and by such supplementary work as the department imposing it may require. *F* stands for a failure and calls for a repetition of the work in course. *I* stands for incomplete and grants the student further time for the completion of the required work.

Regular examinations for the removal of conditions shall be given at no other time than (1) the week following the Easter recess and (2) the registration week in September.

Students having conditions will be subject to the action of the Student Work Committee.

A condition not removed at the first opportunity becomes a failure subject to the rules governing failures.

Failures necessitate the taking of the work again in class.

A student carrying less than the complete schedule of work may pay fees on a clock-hour basis.



A student who is conditioned in the majority of the subjects given in any year will become a *failed* student and must repeat the entire work of that year.

Students who carry *failures* into a succeeding year may find a resultant conflict of study hours; in that event they will give preference to the unfinished studies of the lower conflicting course.

Any student reported below grade in sixty per cent of his work at the middle or close of the first semester or middle of the second semester shall be dropped from the rolls and shall not be allowed to re-enter until the opening of the following year.

*Probation.*—Such student shall then be allowed to enter on probation; and, if reported by the middle of the semester or after as delinquent in two or more subjects, he shall be dropped without further action for that year.

*Work limited.*—Students pursuing any continuous subject who have done such poor work in the first semester as to receive a condition or failure in such subject, shall not be allowed to elect another subject in place of that in which the condition or failure was received, but shall be required to devote their full time to the remaining subjects of the course.

Exception to this rule shall be made only by the Committee on Students' Work after full investigation.

*Electives.*—A student may elect a subject in another department if his standing in the regular course is satisfactory and on approval of the Student Work Committee.

### *Attendance and Discipline*

All lectures, laboratory, and infirmary courses and clinics must be taken in full and must invariably be entered upon during the week in which they begin.

All students are required to provide themselves with instruments, books, tools, and materials as prescribed by the college.

Tardiness and absences are controlled by the principle that each student must do the full work of the course.

No student whose absences in any semester exceed four weeks in the aggregate shall be admitted to final examination without special permission of the Students' Work Committee.

Any student's registration may be refused or cancelled by the Registrar at the request of the Students' Work Committee on account of absences, indifference to study, poor scholarship, disorderly or immoral conduct, and for dishonesty in classroom or laboratory work.

The practice of dentistry by students, except under the direct supervision of a preceptor, is prohibited by law in the State of Minnesota. Students violating this law will be suspended or expelled.

Except in cases of required work students are not allowed to obligate themselves in the Military Department, band, or other college activities, without permission from the Faculty.

*Eligibility Regulations*

No student shall take part in any public performance of a dramatic or musical club, or be eligible to election or appointment to official positions upon the boards of student publications, or take part in intercollegiate debates or oratorical contests, unless he has a clear record at the time.

## ADVANCED STANDING

Applicants for advanced standing must present satisfactory evidence of possessing the preliminary educational qualifications required of the class they desire to enter.

They must also satisfy the professors of the branches from which they wish to be exempt, that the work pursued by them in other institutions was equal in scope and amount to that passed by the class they propose to enter.

No credits are accepted unconditionally, the Faculty reserving the privilege of examining any applicant when deemed necessary.

All certificates pertaining to advanced standing must be presented to the Dean, who will send them to the respective professors for acceptance or report of further requirements for acceptance.

## REQUIREMENTS FOR GRADUATION

A candidate for the degree of Doctor of Dental Surgery must be twenty-one years of age, of good moral character, and, after having satisfied all the requirements for admission to the college, must have complied with all the rules and regulations of the college and obtained regular credit for all subjects of the entire course.

# COURSE OF STUDY

	First Semester		Second Semester		Total	
	Credits	Hours	Credits	Hours	Credits	Hours
Freshman Year						
Anatomy, Dental .....	1	16	2	64		
Animal Biology .....	3	96	3	96		
*Chemistry .....	5	160	5	160		
English, Rhetoric .....	3	48	3	48		
Military Science and Tactics.....						
Prosthetic Lecture and Technique.....	3	112	2	64		
**Technical Drawing .....	2	96	2	96		
	17	528	17	528	32	1,056
Sophomore Year						
Anatomy, Gross .....	5	144	5	144		
Anatomy, Histology and Embryology...	4	128				
Anatomy, Dental .....	3	96				
Chemistry, Organic .....	3	96				
Military Science and Tactics.....						
Operative Dentistry .....			4	160		
Physiology and Physiological Chemistry.			7	192		
Prosthetic Lectures and Technique.....	3	144	2	96		
	18	608	18	592	36	1,200
Junior Year						
Bacteriology, General and Special.....	4	112				
Clinical Practice .....	4	192	10	480		
Crown and Bridge Lec. and Technique.	4	160				
Dental Metallurgy .....	1	16				
Operative Dentistry Lec. and Rec.....	1	16	1	16		
Orthodontia Technique .....	2	96				
Pathology, General and Special.....			4	112		
Pharmacology .....				48		
Prosthetic Dentistry Lec. and Rec.....	2	32				
	18	624	18	656	36	1,280
Senior Year						
Clinical Practice .....	12	576	12	576		
Crown and Bridge Work Lec. and Rec..	1	16	1	16		
Operative Dentistry Lec. and Rec.....	1	16				
Oral Surg., Clin. Path. and Radiog. Lec. and Rec. ....			2	32		
Orthodontia Lectures and Recitations..	1	16	1	16		
Pathology and Therapeutics.....	3	48				
Theory and Practice of Dentistry and Conference Course in Applied Eco- nomics, Jurisprudence, Psychology, Ethics and Art .....			2	32		
	18	672	18	672	36	1,344
					142	4,880

\* Students who have had Elementary Chemistry will be allowed four advanced credits.

\*\* Substitute allowed by the Student Work Committee.

One credit hour may be either one recitation hour through one semester, two laboratory hours with outside work, or three laboratory hours without outside work. One semester—sixteen weeks, one week—forty-eight hours.

## DEPARTMENTAL STATEMENTS

Odd numbers indicate first-semester courses; even numbers, second-semester courses. A combination of the two (e. g., 5-6) indicates courses continuing through the year. In the case of courses repeated the second semester, the suffix *a* indicates first semester; the suffix *b*, second semester.

### ANATOMY

Professors CLARENCE M. JACKSON, THOMAS G. LEE; Associate Professor CHARLES A. ERDMANN; Assistants CHESTER A. STEWART, JOHN A. KITTELSON, FLORIEN VAUGHN, JAMES C. MCKINLEY.

#### COURSES

No.	Title	Credits	Offered to	Prereq. courses
5-6.	Gross Anatomy .....	8	Fr.	An. Biol.
7.	Histology and Embryology.....	4	Fr.	An. Biol.

5-6. GROSS ANATOMY. Lectures, recitations, demonstrations, and laboratory work in gross human anatomy. Includes descriptive anatomy, including osteology, with special emphasis upon the skull and the digestive tract; later a complete and careful dissection of the head and neck. Open only to dental students and especially arranged for their needs. JACKSON, ERDMANN, VAUGHN.

7. HISTOLOGY AND EMBRYOLOGY. Lectures, recitations, laboratory work, and demonstrations. Special emphasis will be laid upon the knowledge of the development and structure of the head, mouth, jaw, teeth, and other portions of the digestive system. JACKSON, LEE, STEWART, KITTELSON, MCKINLEY.

### ANIMAL BIOLOGY

Professors HENRY FRANCIS NACHTRIEB, CHARLES P. SIGERFOOS; Assistant Professor ELMER J. LUND; Instructors GEORGE DELVIN ALLEN; Assistants ADOLPH RINGOEN, HELEN SANBORN.

#### COURSES

<i>Introductory Course</i>				
No.	Title	Credits	Offered to	Prereq. courses
1-2.	General Zoology .....	6†	All	None

† Both semesters must be completed before credit is given for the first semester.

### INTRODUCTORY COURSE

1-2. GENERAL ZOOLOGY. A survey of the animal kingdom, emphasizing the principles of structure, physiology, embryology, classification, and evolution of animals. Textbook, lectures, and quizzes. SIGERFOOS, LUND, ALLEN, RINGOEN, SANBORN.

## CHEMISTRY

Professor GEORGE B. FRANKFORTER; Assistant Professor IRA H. DERBY;  
Instructors LILLIAN COHEN, WOLF KRITCHEVSKY, EARLE K. STRACHAN.

## COURSES

<i>Division of General and Inorganic Chemistry</i>			
No.	Title	Credits Offered to	Prereq. courses
21-22.	Inorganic and Qualitative Chemistry .....	10† Those entering without Chemistry	None
3-4.	Adv. Gen. Chem. and Qualitative Analysis .....	6† Fr., soph., jr.	Entrance credit in Chemistry

† Both semesters must be completed before credit is given for the first semester.

21-22. INORGANIC AND QUALITATIVE CHEMISTRY. This includes a study of the non-metals, metals, and qualitative analysis, together with a thoro discussion of the fundamental laws and theories of chemistry. FRANKFORTER, COHEN.

3-4. ADVANCED GENERAL CHEMISTRY AND QUALITATIVE ANALYSIS. Lectures and laboratory work. A discussion of the general chemical theories and laws, with qualitative analysis. FRANKFORTER, DIETRICHSON, and Assistants.

## CROWN AND BRIDGE WORK

Professor FORREST H. ORTON; Associate Professors PETER J. BREKHUS, ALFRED A. PAGENKOPF, GEORGE W. REYNOLDS, AMOS S. WELLS, CHARLES A. WIETHOFF; Assistant Professors WILLIAM McDUGALL, WILLIAM A. ROLL; Instructors EVERETT E. MACGIBBON, HERBERT C. NELSON, CARL OTTO.

## COURSES

No.	Title	Credits	Offered to	Prereq. courses
1.	Crown and Bridge Technique.....	4	Jr.	Dent. Anat. 3
2.	Crown and Bridge Technique.....	3	Jr.	1
3.	Crown and Bridge Practice.....	4	Sr.	2
4.	Crown and Bridge Practice.....	4	Sr.	3

1. CROWN AND BRIDGE TECHNIQUE. A course of lectures, demonstrations, and laboratory work that includes all the more important forms of crowns and bridges. PAGENKOPF, WELLS, REYNOLDS, NELSON, OTTO, MACGIBBON.

2. CROWN AND BRIDGE TECHNIQUE. Continuation of Course 1 as outlined above. PAGENKOPF, WELLS, REYNOLDS, NELSON, OTTO, MACGIBBON.

3. CROWN AND BRIDGE PRACTICE. A course of lectures and clinical practice covering the entire field of crown and bridge work. ORTON, BREKHUS, McDUGALL, WIETHOFF, ROLL.

4. CROWN AND BRIDGE PRACTICE. Continuation of Course 3 as outlined above. ORTON, BREKHUS, McDOUGALL, WIETHOFF, ROLL.

### DENTAL ANATOMY

Associate Professor GEORGE M. DAMON; Assistant Professors OSCAR COOPERMAN, CARL O. FLAGSTAD, CARL H. PETRI, CHARLES E. RUDOLPH; Instructors LEE H. HARKER, PAUL S. PARKER.

#### COURSES

No.	Title	Credits	Offered to	Prereq. courses
1.	Dental Anatomy .....	1	Fr.	None
2.	Dental Anatomy .....	2	Fr.	1
3.	Dental Anatomy .....	3	Soph.	2

1. DENTAL ANATOMY. A course of lectures and recitations on the anatomy and nomenclature of the teeth. DAMON.
2. DENTAL ANATOMY. The course will consist of lectures, recitations, and such laboratory work as drawing, dissection, modeling, and carving of the teeth. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH, HARKER, PARKER.
3. DENTAL ANATOMY. Continuation of Course 1 as outlined above. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH, HARKER, PARKER.

### DENTAL METALLURGY

Professors ALFRED OWRE, HARRY C. LAWTON.

#### COURSES

No.	Title	Credits	Offered to	Prereq. courses
1.	Dental Metallurgy .....	1	Jr.	Chem. 21-22

1. DENTAL METALLURGY. Lectures, recitations, and demonstrations, taking up the most important metals with special reference to those used in dentistry. OWRE, LAWTON.

### DRAWING AND DESCRIPTIVE GEOMETRY

Professor WILLIAM H. KIRCHNER; Instructors CHARLES H. BLITMAN, RUTCHER SKAGERBERG.

#### COURSES

No.	Title	Credits	Offered to	Prereq. courses
21-22.	Technical Drawing .....	4	All	None

- 21-22. TECHNICAL DRAWING. Theoretical and practical graphics, the reading and making of working plans. Projection, sketching, lettering, conventions, renderings, and translations. KIRCHNER, BLITMAN, SKAGERBERG.



## MILITARY SCIENCE AND TACTICS

Professor and Commandant BERNARD LENTZ; Assistant Commandant and  
Brigade Adjutant WALTER F. RHINOW; Band Instructor BERT ROSE.

## COURSES

No.	Title	Credits	Offered to	Prereq. courses
1-2.	Military Drill .....	None	Fr.	None
3-4.	Military Drill .....	None	Soph.	1 yr. Drill
5-6.	Military Drill .....	3*	Jr., sr.	2 yrs. Drill
8.	Military Science .....	2†	Jr., sr.	2 yrs. Drill

\* No student may receive more than a total of six credits for elective work in both Physical Education and Military Drill.

† If taken in connection with Course 5-6.

1-6. MILITARY DRILL. Required of all men in the freshman and sophomore classes. Students are cautioned to report for the first drill and inform themselves of the requirements of the department.

1-2. Freshman: Practical instruction in schools of the soldier, company, and battalion; signals, ceremonies; first aid.

3-4. Sophomore: Practical and theoretical instruction in schools of the company and battalion; advance and rear guard drill; practical and theoretical instruction in guard duty. Gallery practice. Ceremonies.

5-6. May be taken voluntarily by others outside of the freshman and sophomore classes. No credit will be allowed for such drill for less than one year.

8. MILITARY SCIENCE. Instruction in advance and rear guards, outposts, reconnaissance, camping, duties of company commander, articles of war, records.

## OPERATIVE DENTISTRY

Professors JAMES M. WALLS, HENRY S. GODFREY; Associate Professors ROBERT O. GREEN, HERMAN A. MAVES; Assistant Professors RALPH W. COUNTRYMAN, NORMAN J. COX, RICHARD S. MAYBURY, MARK O. PATTRIDGE, JOSEPH F. SHELLMAN; Instructors CLINTON H. BEERS, MAX E. ERNST, WILLIAM C. NAEGELI, JOSEPH M. LITTLE, RAYMOND R. HENRY.

## COURSES

No.	Title	Credits	Offered to	Prereq. courses
2.	Operative Technique .....	4	Soph.	Dent. Anat. 3
3.	Operative Practice .....	3	Jr.	1
4.	Operative Practice .....	4	Jr.	2
5.	Operative Practice .....	4	Sr.	3
6.	Operative Practice .....	4	Sr.	4

2. OPERATIVE TECHNIQUE. This course consists of lectures, recitations, demonstrations, and laboratory work of a technical nature. WALLS, GREEN, COUNTRYMAN, SHELLMAN, BEERS, NAEGELI, HENRY

3. OPERATIVE PRACTICE. This course consists of lectures, recitations, and clinical practice. WALLS, GREEN, COUNTRYMAN, SHELLMAN, BEERS, NAEGELI, HENRY.
4. OPERATIVE PRACTICE. A course of lectures, recitations, conference work, demonstrations, and clinical practice covering the entire field of operative dentistry. WALLS, GODFREY, MAVES, COX, ERNST, LITTLE, MAYBURY, PATTRIDGE.
5. OPERATIVE PRACTICE. Continuation of Course 3 as outlined above. WALLS, GODFREY, MAVES, COX, ERNST, LITTLE, MAYBURY, PATTRIDGE.
6. OPERATIVE PRACTICE. A course in the general practice of operative dentistry. WALLS, GODFREY, MAVES, COX, ERNST, LITTLE, MAYBURY, PATTRIDGE.

### ORAL SURGERY

Professor THOMAS B. HARTZELL; Associate Professor CHARLES A. GRIFFITH; Assistant Professor RAY R. KNIGHT; Instructors K. PAUL CARSON, WILLIAM A. GREY, HAROLD J. LEONARD, MARY V. HARTZELL.

#### COURSES

No.	Title	Credits	Offered to	Prereq. courses
1.	Oral Surgery Practice .....	1	Jr.	Path., Ther.
2.	Oral Surgery .....	2	Sr.	1

1. ORAL SURGERY. This course is taught by lectures, recitations, and practical demonstrations, covering the field of oral diseases, physical diagnosis, anesthesia, urinalysis, and a clinical course in pyorrhea treatment. HARTZELL, GRIFFITH, KNIGHT, LEONARD, CARSON, GREY, HARTZELL.
2. ORAL SURGERY. Continuation of Course 1 as outlined above. GRIFFITH, KNIGHT, LEONARD, HARTZELL, CARSON, GREY.

### ORTHODONTIA

Professor OSCAR A. WEISS; Associate Professors WILLIAM F. LASBY, HARRY C. LAWTON; Assistant Professor CARL O. FLAGSTAD; Instructor BERT G. ANDERSON.

#### COURSES

No.	Title	Credits	Offered to	Prereq. courses
2.	Orthodontia Technique .....	2	Jr.	Pros. Tech. 4
3.	Orthodontia Practice .....	1	Jr.	1
4.	Orthodontia Practice .....	1	Sr.	2

2. ORTHODONTIA TECHNIQUE. A course of lectures, recitations, and laboratory work in the technique of steel and the making of regulating appliances. WEISS, LAWTON, ANDERSON.
3. ORTHODONTIA PRACTICE. A course of lectures, recitations, and clinical work on the theory and practice of orthodontia. Every student is re-

quired to treat at least one irregularity of the teeth. WEISS, LASBY, FLAGSTAD, ANDERSON.

4. ORTHODONTIA PRACTICE. A continuation of Course 2 as outlined above. WEISS, LASBY, ANDERSON.

## PATHOLOGY, BACTERIOLOGY, AND PUBLIC HEALTH

Professor HAROLD E. ROBERTSON; Associate Professors ELEXIOUS T. BELL, WINFORD P. LARSON; Assistant Professor MOSES BARRON; Instructors ARTHUR T. HENRICI, WILLIAM C. JOHNSON, ALBERT C. POTTER, MARGARET WARWICK; Assistant RAY SHANNON.

### COURSES

No.	Title	Credits	Offered to	Prereq. courses
51-52.	Pathology, General and Special....	4	Jr.	His. 51
58-59.	Bacteriology, General and Special..	4	Jr.	Chem. 21-22

51. GENERAL PATHOLOGY. The study of pathologic processes; of regeneration and repair; and of tumors. ROBERTSON, BELL, BARRON, POTTER, WARWICK.
- 52a,b. SPECIAL PATHOLOGY. Studies of museum preparations and of material from autopsies and operations; the pathology of infectious diseases, as tuberculosis, syphilis, typhoid fever, etc.; the special pathology of various organs. ROBERTSON, BELL, POTTER, WARWICK.
58. GENERAL BACTERIOLOGY. Preparation of culture media. The morphology of bacteria; methods of staining and identification; anaerobic bacteria; principles of sterilization and disinfection; examination of air, water, milk; relation of bacteriology to the industries. LARSON, WARWICK, HENRICI.
59. SPECIAL BACTERIOLOGY. Study of pathogenic bacteria; bacteriological methods in clinical diagnosis; principles of infection and immunity, with practical application of serum reactions.

## PATHOLOGY AND THERAPEUTICS

Professor THOMAS B. HARTZELL, HAROLD J. LEONARD.

### COURSES

No.	Title	Credits	Offered to	Prereq. courses
1.	Pathology and Therapeutics.....	3	Sr.	His. and Bac.

1. PATHOLOGY AND THERAPEUTICS. Lectures and recitations involving general pathology as a foundation of the special pathology of the oral cavity; particular attention to therapeutic requirements of the mouth and teeth. Supplemented by laboratory work under the care of the chair of pathology, Department of Medicine. HARTZELL, LEONARD.

## PHARMACOLOGY

Professor ARTHUR R. HIRSCHFELDER; Associate Professor EDGAR D. BROWN; Assistant Professor ROBERT A. HALL.

## COURSES

No.	Title	Credits	Offered to	Prereq. courses
2.	General Pharmacology .....	2	Jr.	Chem. 21, 22
2.	Experimental Pharmacology .....	1	Jr.	1

2. GENERAL PHARMACOLOGY as applied to dentistry comprises a study of the properties, action, and therapeutic application of the principal drugs used in dentistry with exercises in prescription writing. HALL.
2. EXPERIMENTAL PHARMACOLOGY. Laboratory exercises affording the student the opportunity for observing the effects of the principal types of drugs upon the animal will be given to sections of the class in connection with Course 1. HIRSCHFELDER, BROWN, HALL.

## PHYSIOLOGY

Professor ELIAS P. LYON; Associate Professors RICHARD OLDING BEARD, FREDERICK H. SCOTT; Assistant Professors M. RUSSELL WILCOX, JOHN F. MCCLENDON; Instructors CHAUNCEY J. V. PETTIBONE, FRANCIS B. KINGSBURY; Assistants ROY E. CRUZEN, LYLE ROBERTS.

## COURSES

No.	Title	Credits	Offered to	Prereq. courses
4.	Physiologic Chemistry .....	3	Soph.	Chem. 21, 22
6.	Physiology .....	4	Soph.	An. Biol. and Chem. 21, 22

4. PHYSIOLOGIC CHEMISTRY. A course of lectures and laboratory studies of the compounds occurring in the animal body; of the food-stuffs; the digestion and of urinalysis. PETTIBONE, KINGSBURY, and Assistants.
6. PHYSIOLOGY. Lectures and laboratory exercises. The study of the general functional properties of tissue cells; of muscle-nerve functions; of blood, the circulation, respiration, digestion, secretion, and excretion. LYON, BEARD, SCOTT, MCCLENDON, and Assistants.

## PROSTHETIC DENTISTRY

Professor OSCAR A. WEISS; Associate Professors GEORGE M. DAMON, WILLIAM F. LASBY, HARRY C. LAWTON; Assistant Professors OSCAR COOPERMAN, CARL O. FLAGSTAD, CARL H. PETRI, CHARLES E. RUDOLPH; Instructors BERT C. ANDERSON, LEE A. HARKER, PAUL S. PARKER, ANDREW J. WEISS.

COURSES

No.	Title	Credits	Offered to	Prereq. courses
1.	Prosthetic Technique .....	4	Fr.	None
2.	Prosthetic Technique .....	2	Fr.	1
3.	Prosthetic Technique .....	3	Soph.	2
4.	Prosthetic Practice .....	2	Soph.	3
5.	Prosthetic Practice .....	2	Jr.	4
6.	Prosthetic Practice .....	1	Jr.	5
7.	Prosthetic Practice .....	1	Sr.	6
8.	Prosthetic Practice .....	1	Sr.	7

1. PROSTHETIC TECHNIQUE. This course consists of lectures and technic work in the laboratory, comprising impression materials and their uses and the different processes of plate work. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH, HARKER, PARKER.
2. PROSTHETIC TECHNIQUE. Continuation of Course 1 as outlined above. DAMON, COOPERMAN, FLAGSTAD, PETRI, RUDOLPH, HARKER, PARKER.
3. PROSTHETIC TECHNIQUE. The course consists of lectures, recitations, and laboratory work covering the principles and practice of plate work. WEISS, LAWTON, ANDERSON, WEISS.
4. PROSTHETIC PRACTICE. A course of lectures, recitations, and clinical work covering the simpler forms of prosthetic practice. WEISS, LASBY, FLAGSTAD.
5. PROSTHETIC PRACTICE. A course of lectures, recitations, and clinical covering cleft palate and other special cases in addition to the general prosthetic practice. WEISS, LASBY, FLAGSTAD.
6. PROSTHETIC PRACTICE. Continuation of Course 5 as outlined above. WEISS, LASBY, FLAGSTAD.
7. PROSTHETIC PRACTICE. A course in general practice of prosthetics. WEISS, LASBY, FLAGSTAD.
8. PROSTHETIC PRACTICE. A continuation of Course 7 as outlined above. WEISS, LASBY, FLAGSTAD.

RHETORIC AND PUBLIC SPEAKING

Professor JOSEPH M. THOMAS; Instructor CYRIL A. HERRICK.

COURSES

No.	Title	Credits	Offered to	Prereq. courses
3.	Composition and Rhetoric.....	3	Fr.	None
4.	Composition and Rhetoric.....	3	Fr.	None

3. RHETORIC AND COMPOSITION. Training in writing; study of the work of writers who have handled scientific subjects with clearness and power; outside reading. HERRICK.
4. RHETORIC AND COMPOSITION. A continuation of Course 3. HERRICK.

## THEORY AND PRACTICE OF DENTISTRY

Professors ALFRED OWRE, BROR E. DAHLGREN, and Associates.

## COURSES

No.	Title	Credits	Offered to	Prereq. courses
2.	Theory and Practice of Dentistry....	2	Sr.	None
2.	THEORY AND PRACTICE OF DENTISTRY. A lecture and conference course in the theory and practice of dentistry and applied Economics, Jurisprudence, Psychology, Ethics, and Art. OWRE, DAHLGREN, and Associates.			

## ELECTIVES

The following subjects or substitute subjects may be taken as electives by students having a satisfactory standing and with the approval of the Student Work Committee:

Dental Electricity and Radiography  
 Ethics  
 Economics  
 Psychology  
 Special Bacteriology  
 Special Pathology  
 Special Pharmacology



# STUDENTS

## SENIORS

Behring, Walter E.	Gies, Clarence S.	Meyer, Erna M.
Benepe, Louis M., Jr.	Glade, Thomas A.	Meyer, Richard G.
Benson, Carl A. W.	Gottenborg, Archie C.	Nelson, Earl W.
Bratager, George C.	Haedge, Carl	Olsen, Alfred
Burrington, Thero E.	Hansen, Elmer L.	Olsen, Halver C.
Bursell, Harry L.	Hayes, Fred H.	Oswald, Eldred
Butler, George V.	Hedin, Oscar E.	Parker, Lee E.
Carlson, Arthur C.	Hermann, Clarence	Peterson, Palmer L.
Carroll, Ray T.	Hicks, Harvey R.	Price, Milton A.
Cary, Milburn J.	Holmgren, Helmer W.	Ralston, Elmer H.
Clay, Ray L.	Huderle, Arthur J.	Reed, Kenneth C.
Cohen, Joseph T.	Ingebrigtsen, Leonard	Russell, Edwin C.
Covey, Wilbur C.	Johnson, Carl E.	Ryan, Edward
Cowan, Vern L.	Johnson, Oscar H.	Sandahl, Carl M.
Crowell, Walter, Jr.	Kennedy, Walter J.	Schopf, Henry J.
Cruttenden, Louis	Keyworth, Rolend G.	Schultz, Wm. E.
Curry, Ray D.	Kotrich, Joseph F.	Simmons, John S.
Dahl, Casper	Kraft, Max C.	Stewart, Roscoe E.
Danz, Paul E.	Lacey, Glenn D.	Ettemper, Elmer
Darrington, Thomas M.	Lang, Archie, Jr.	Stowe, Lewis Riddell
Delton, Rudolph W.	Larson, Chester D.	Sullivan, Emmet E.
Dick, Shellie E.	Larson, L. Leonard	Talbot, Harry G.
Doyle, Elmer	Lehman, C. V.	Taylor, William R.
Dunn, Patrick, M.	Leighton, Emmet	Tibesar, Frank E.
Eastman, Victor J.	Litin, Abe A.	Traholt, Carl F. C.
Ellertson, Carl H.	Lossius, Sophus	Vroman, Clinton H.
Evjen, Einar	Lundblad, Clarence H.	Wahlquist, Harold
Ewert, William	Love, Elwyn K.	Webb, William L.
Ford, William J.	Lussier, Norman A.	Zierke, Roland H.
Gardner, Herbert E.	Manternach, Paul	

## JUNIORS

Abell, Walter J.	Healy, Clifford J.	Ribbel, George H.
Anderson, Leroy C.	Hendricks, Lambert M.	Ringstrom, George M.
Bergerson, Louis B.	Herrmann, Max R.	Roelike, Stephen J.
Bergh, Ingvald G.	Hillman, Harold C.	Robinson, John F.
Birnberg, Jacob V.	Hoglund, Herbert A.	Saevig, Gerhard
Bodien, August T.	Holliday, Houghton	Schuft, Adolph F.
Borovsky, Abe	Iverson, Walter G.	Sell, Charles A.
Brink, Frank T.	Johnson, Ray L.	Sahckell, Harold
Bruss, Erwin F.	Jernall, Roy M.	Shanahan, Raymond
Buehler, John E.	Just, Dagny	Simonson, August E.
Chisholm, David R.	Kubesh, Edward J.	Skon, Arthur E.
Colburn, Daniel N.	LeMay, Ray B.	Stevens, Marion
Cohler, Michael J.	Lillehei, Clarence I.	Swanson, Clayton N.
Connell, John E.	Lindelein, Clifford O.	Thorson, M. Hauman
Cook, George W.	Linguist, Robert W.	Tucker, Charles M.
Danz, Beatrice	Lorhammer, Gustav A.	Tucker, Clarence A.
Dampier, Donald G.	McCaffrey, William J.	Von Bohland, Frederick
Diamond, Hymen A.	McKenzie, Morell D.	Watson, William E.
Durfee, Laurence M.	Meintsma, Richard	Wedin, Arthur C.
Farrell, Stanley M.	Miller, Melvin A.	Weibeler, Christram
Fee, Graham B.	Neiman, Robert	Weisman, Harry L.
Feehey, Howard S.	Nelson, Clarence A.	Wendell, Lehman
Fossum, Edgar A.	Nylander, Victor T.	West, Earl C.
Freier, Ephraim F.	Paske, Charles H.	Whitaker, Vernon D.
Gabrielson, Leonard C.	Peterson, Chester R.	Whitney, William C.
Geddes, Donald D.	Peterson, Walter F.	White, Eleonora S.
Gerde, Magnue A.	Pfeiffer, Roy H.	White, Floyd M.
Girvin, Cecil W.	Pierson, Linus L.	Wilson, Oliver P.
Harper, Fred W.	Plonty, Eatl W.	Wolter, Amadeus
Hansen, Arthur P.	Radke, L. Maurice	Zettler, Walter W.
Hartig, Rolf P.	Radke, W. Lynn	Ziskin, Daniel
Hartwig, Joseph I.	Reinking, Henry N.	
Haven, Walter K.	Reynolds, William D., Jr.	

## SOPHOMORES

Abrahams, Oscar H.	How, Roy M.	Peterson, Leonard C.
Albrecht, Arnold W.	Johnson, George A.	Plonty, E. W.
Anderson, Ernest C.	Johnson, Herbert E.	Priske, Leo R.
Anderson, Gustave R.	Johnson, Harvey	Robb, George L.
Anderson, C. Oscar	Kelsey, Clarence	Sahisbury, John A.
Anderson, Raymond H.	Kirkpatrick, Frederick K.	Schmidt, John C.
Bang, Charles B.	Kirkpatrick, Virgil L.	Sell, Milton M.
Beckenstein, Isadore S.	Koppes, Albrecht J.	Shaw, Will S.
Borosvky, Jacob L.	Krishef, Jacob L.	Selsby, Jay
Brady, Grank P.	La Freniere, John G.	Silber, Victor L.
Brandenburg, George A.	Lauer, Vernon G.	Smith, Jarvey M.
Brooks, Fiske I.	Lee, Cloyde W.	Simon, Albret F.
Carey, Walter E.	Lee, Ernest T.	Snyder, Charles E.
Carlson, Melvin H.	Lucian, Arthur E.	Starr, Orrin D.
Davis, Vernon J.	McGinn, J. A.	Storberg, Victor H.
Dwire, George J.	McKinny, Walter H.	Swanson, Ernest E.
Eklund, Conrad L.	Meacham, L. F.	Swennes, Harold G.
Farmer, Ernest A.	Minor, Clayton	Swenson, Clifford R.
Faus, Neil A.	Moos, Louis	Thomas, Harold E.
Finnegan, Roscoe L.	Nash, Carl G.	Thornby, Ingram J.
Flandrich, Carl R.	Nellermoe, Joy O.	Thorson, H. A.
Foster, Leslie W.	Nelson, Carl W.	Tomasck, Anthony T.
Gardner, Arthur W.	Nelson, John W.	Wachtler, Wesley R.
Geldman, David I.	Ness, Hans B.	Wellman, H. Walter
Gilbert, Lloyd I.	Nishioka, Maschito	Werner, Conrad O.
Gullinbs, Ingeman O.	Olson, Raymond C.	Williams, Sigfred G.
Hagberg, Warner V.	Passer, Clarence W.	Woodruff, Harold S.
Halvorsen, Jorgen	Pattridge, Walter H.	Woods, Lorenz F.
Hammerel, Albert A.	Perason, Edward H.	Wrbitzky, Benjamin
Haugberg, Elmer T.	Northfield, Ivan H.	Wrucke, Arthur L.
Hiebert, Gerhard	Nylander, William	Zimmerman, Emanuel
Hoitomt, Raymond	Obermeyer, Fred	
Homme, August H.	Peterson, Julius A.	

## FRESHMEN

Anderson, Albert F.	Hedburg, R. Lester	Pederson, J. Philip
Anderson, Harry	Jamieson, Charles H.	Pink, David
Anderson, Lloyd C.	Johnson, August W.	Potter, Lester A.
Aronson, Arthur Verne	Johnson, Joseph A.	Reed, Reginald R.
Babeock, Willard L.	Julien, Antone W.	Rodman, Duane E.
Bierman, Claude W.	Jumer, Albert	Rogstad, Otto V.
Brandt, Henry R.	Kline, Roman P.	Rose, Oscar
Bratrude, Earl J.	Kraft, Russell M.	Rostad, Herman D.
Britzius, Kenneth E.	Krause, Louis C.	Rowell, Will J.
Braun, Edward C.	Kribs, David A.	Sahr, Willard L.
Butler, George E.	LaSalle, Ernest A.	Searing, Ralph T.
Carpenter, Earl R.	Larson, Frans A.	Sivinski, Michael
Conway, James H.	Larson, William J.	Skodopole, Fred L.
Cook, Maynard E.	Levy, Mandel M.	Smith, Leslie H.
Daly, Timothy L.	Long, Glen	Smith, Vernon D.
Davidson, Fred V.	Love, Maclaren E.	Snow, Cleon W.
Dille, Walter O.	Lynde, J. Kenneth	Stafford, Orin K.
Doyle, Thomas C.	McGill, Elmer C.	Stenborg, William A.
Dworsky, Peter A.	Mara, Samuel G.	Stone, Harvey C.
Egdahl, Harry I.	Meisser, John G.	Stunkard, Byron W. S.
Elliott, Virgil D.	Melby, Almer J.	Swenson, Roger B.
Fink, Walter H.	Miszewski, Aurelius	Thiers, Frederick C.
Foster, James M.	Mohn, Elmer J.	Thomas, A. LeRoy
Francis, Vinal B.	Morecom, Harold E.	Thurston, Robert F.
Frank, Joe H.	Mountian, Matthew D.	Ulvestad, Reuben A.
Gross, Louis	Murphy, Sylvester L.	Van Slyke, Clague A.
Gumper, Joseph W.	Mundy, Albert J.	Weiser, George C.
Hallum, Ferdinand	Myhr, Roy O.	Williams, Harry N.
Hancy, Mark H.	Olsen, Ingvald S.	Witter, Leon E.
Hansen, Dallas B.	Olson, Otto T.	
Hawley, Ralph K.	Paine, Ralph	



